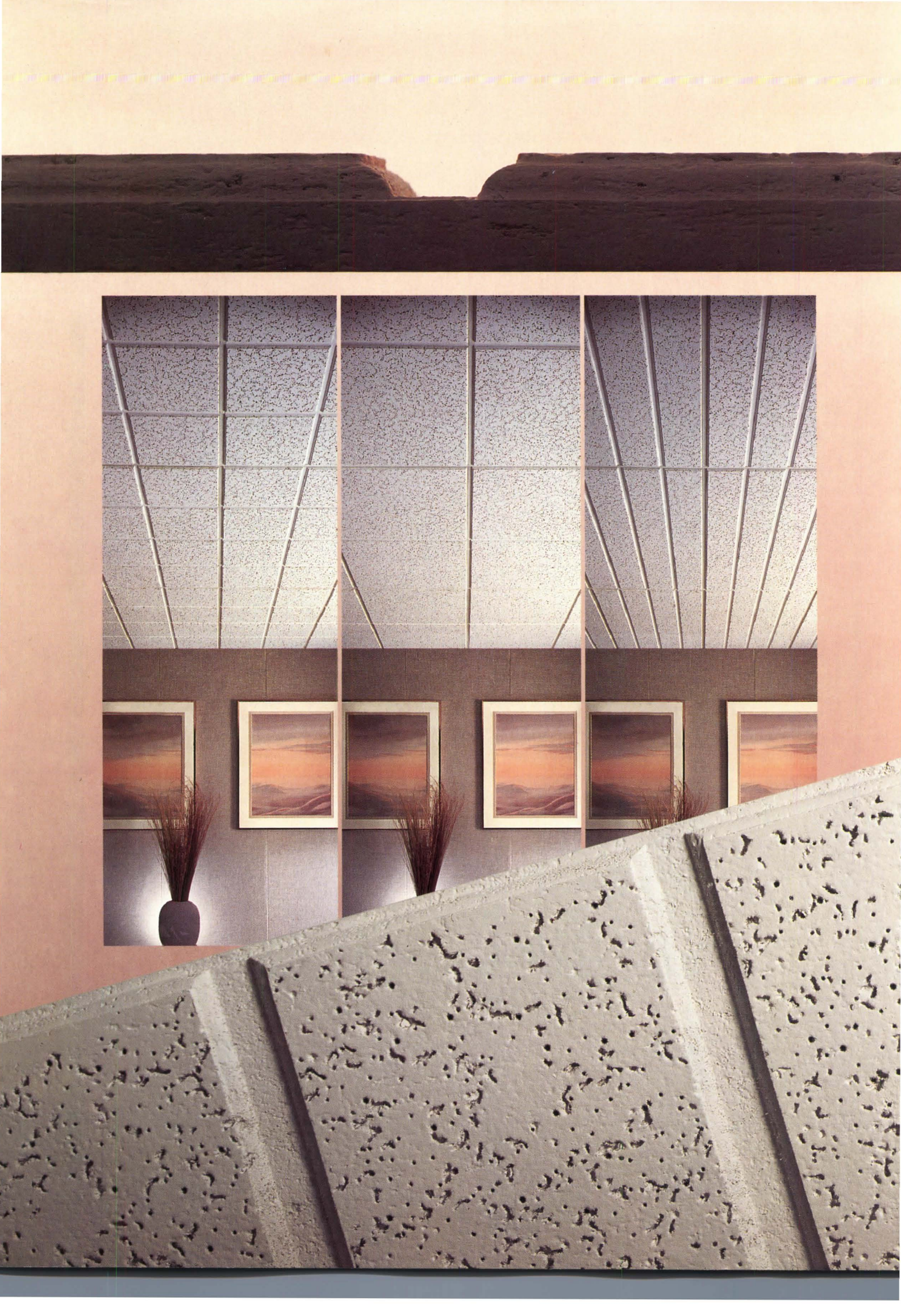
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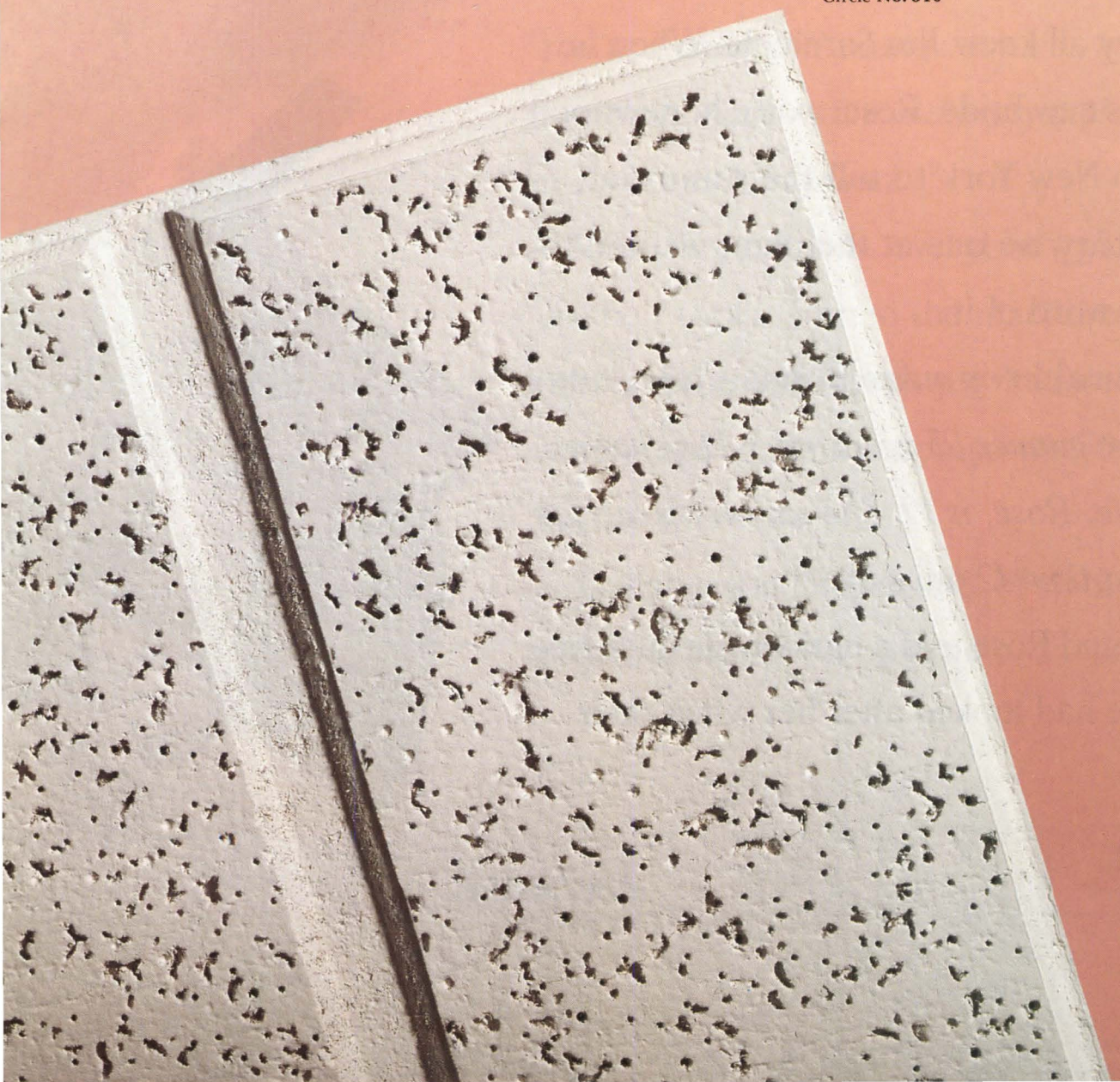
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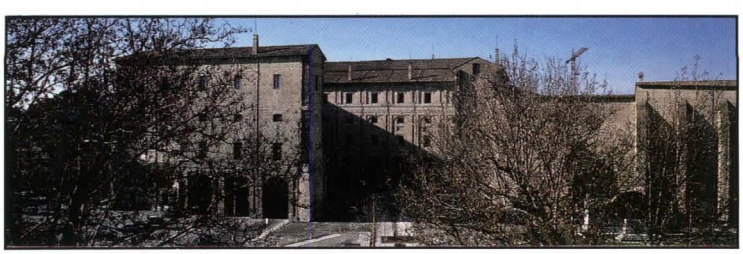
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Cover
The proscenium arch of the Wiltern Theater (p. 91) in Los Angeles.
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Existing Riches

The retrieval of fine architecture from the past through preservation and reuse has been flourishing as never before, but the future of such rehabilitation work is clouded.

THE works of rehabilitation featured in this issue are just a few examples—particularly exciting and telling ones, we feel—selected from the vast amount of work of this kind that is now being done. H.U.D. statistics indicated $20 billion per year was being invested in existing buildings in 1983, and that amount was probably exceeded in 1987; this, however, is a catch-all figure, including everything from simple replacement of worn-out parts to the most extensive alterations, including the misguided ones. At any rate, the investment is massive, and it is extremely gratifying to see so much good-to-excellent rehabilitation taking place, particularly for those of us who remember the shaky beginnings of the preservation movement in the 1960s. For all their recent enthusiasm for preservation, architects in general were slow to support this movement, which was started mainly by the proverbial "little old ladies in tennis shoes." (For younger readers, I should explain that wearing tennis shoes off the court was then considered eccentric and very unfashionable.) It was only in the late 1960s that architects as a group gave up their commitment to building everything anew and recognized the virtues of rehabilitation.

One souvenir of the period when the preservation cause was struggling for support is the book *With Heritage So Rich,* the 1966 report of a special committee on historic preservation, sponsored by the U.S. Conference of Mayors and supported by the Ford Foundation. The preservation news in those days was mostly bad: New York's monumental Penn Station had just been demolished for construction of a new Madison Square Garden arena (which may now be replaced by office towers if a proposed new "Garden" on another site goes ahead). Also threatened were Richardson's Glessner House in Chicago, Mullet's Old Post Office in St. Louis, and Sullivan's Guaranty Building in Buffalo—all three subsequently saved.

The book made a plea for a change in attitude. "There are still millions of Americans," it observed, "who believe as a matter of principle that anything new is better by the sole virtue of novelty." How commonplace it has now become to observe that today's public defends almost anything old against the threat of new construction. This is partly a credit to the preservation movement, which has proved its worth, partly a reproach to architects and builders for the last two decades of new construction.

While stressing public attitudes, the book also dealt with more concrete matters. Although preservation was then very much the province of nonprofit organizations—as much of it still is—the authors pointed out the importance of tax laws as crucial factors behind private-sector decisions to demolish; the tax codes of that time rewarded new construction, or even razing of buildings to create parking lots. While acknowledging that the profit motive could not be suppressed, the authors called for needed revisions in tax codes.

Such tax law changes were made, the most important of which was the 1981 enactment of rehabilitation tax credits. But now that preservation is flourishing, it is hardly surprising that these benefits have been reduced as part of the Tax Reform Act of 1986. Under the new law, the maximum credit has dropped from 25 percent to 20 percent, and the National Park Service's reviews for eligibility of rehabilitation plans have become more demanding. Another tax reform provision with unforeseen impact is the limitation on "passive" investments by individuals; it turns out that many for-profit rehab efforts depended on tax benefits to such "passive" participants. According to a recent article in Urban Land ("The Tax Reform Act's Passive Activity Rules," by Rypkema and Spatz, Oct. 1987) private investment in the kind of rehabilitation covered by the tax credits is likely to drop 30 to 45 percent, that is $600 million to $900 million per year, a prediction already borne out by a sharp decline in applications for National Park Service review of proposals.

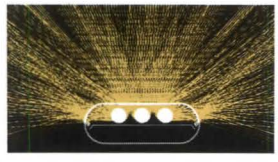
A bill introduced in Congress last month (the Kennelly-Danforth Community Development Tax Bill of 1988) would remove rehab projects from the passive activity restrictions and otherwise facilitate investment in inner-city, low-income rehab projects. This sounds like a promising new adjustment in a tax system that seemingly can never take a neutral position toward any kind of economic activity.

It would be too bad if, just when we have so many fine examples of preservation and reuse to celebrate, we begin to lose precious rehabilitation opportunities—either through a weakening of public commitment to preservation or a related reversal of tax incentives, both of which are essential to the reclaiming of existing architectural resources. ■





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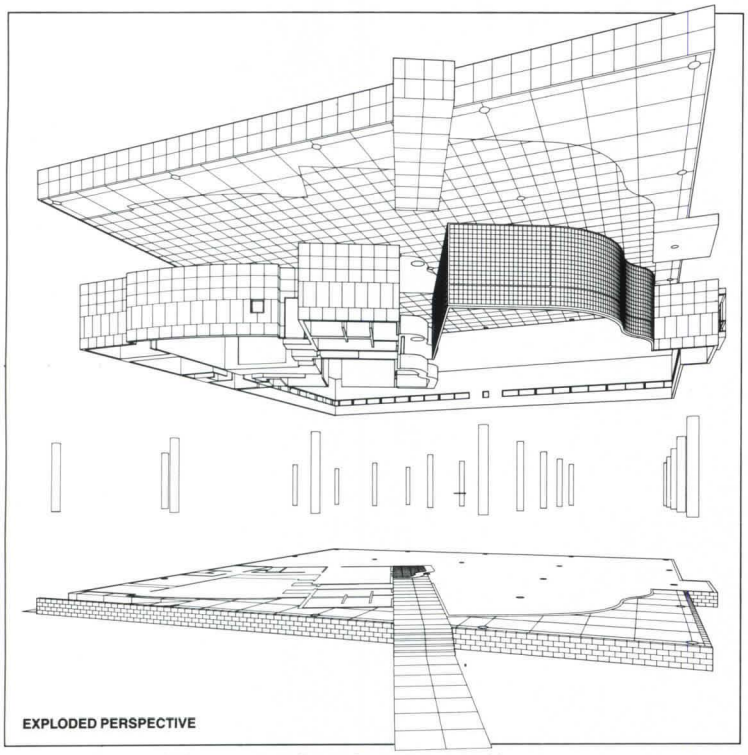
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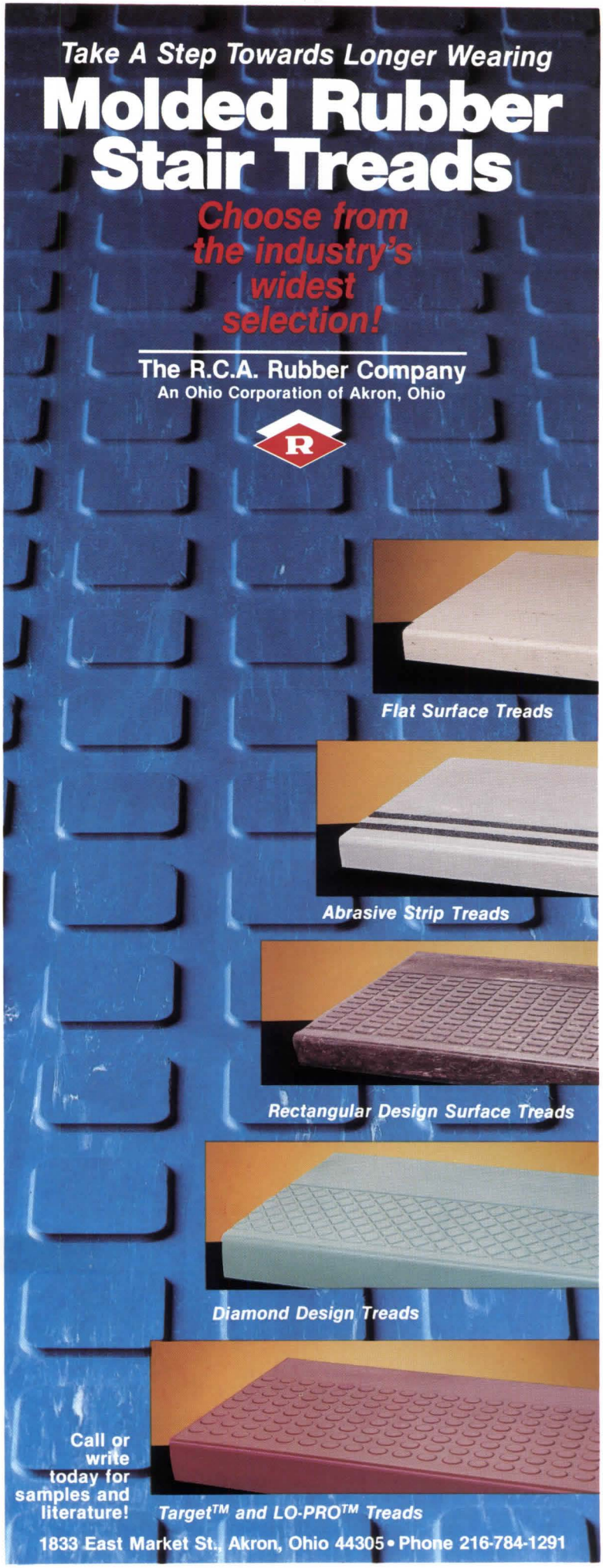
Branch Library, Alpharetta, Ga., by Anthony Ames, Architect.

Library Drawing Clarified
Rendered illegible by a reproduction error in the March P/A (p. 54) the drawing of Anthony Ames's public library in Alpharetta, Georgia, is published again above. Most of its 10,000 square feet will be an open area for stacks and reading. Support offices and meeting space will be in one corner and laid out at an angle related to the site's entrance axis. Between a concrete block plinth and a gridded metal fascia, walls are faced with cementitious panels; ribbon windows are at eye level for seated readers.

Frankfurt Efficiency
"It works . . ."; "Done well and sympathetically . . ."; "A strong project . . ." Hogwash! It is obvious from the jury comments concerning the Frankfurt Mixed Use Complex (January P/A, pp. 96–98) that the jurors forgot to review the floor plans for the office tower. Not only are the core to exterior wall depths inadequate for efficient interior layout, the curve portion of each plan, a rather significant design feature, cannot be utilized if the loop corridor is constructed. Maybe Mr. Maki was correct in his comment, "This is a delightfully informative tower." It informs me of the architect's total disregard for function and logic. My, how easy tower design would be if we all could throw out the rules as these architects did. When will juries finally see through fantasy pictures and models and encourage realistic and pragmatic design?
Richard D. Fletcher, Jr.
Architect/Developer
Nashville, Tennessee
[The architects were following the rules—the German rules. What is considered an efficient core-to-exterior-wall depth in America is called illegal in Germany, where each desk must be within a mandated distance from windows.—Editors]

Awards Lunch Numbers
About 350 people attended the 35th annual P/A Awards lunch on January 22 (March P/A, p. 39).

Winery Collaborator
Associated architect for the Clos Pegase Winery (February P/A, pp. 82–89) was Hildegard A. Richardson, Architect, of San Francisco.



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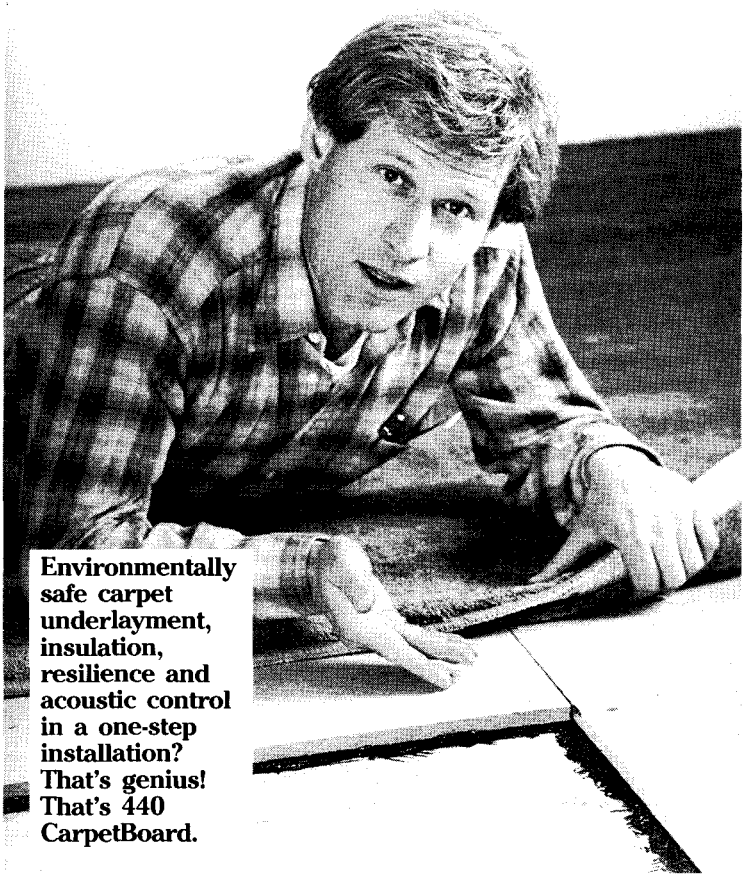
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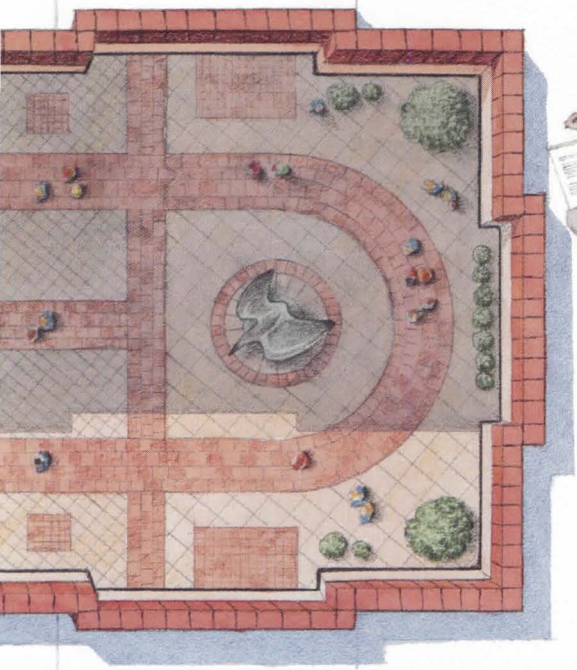
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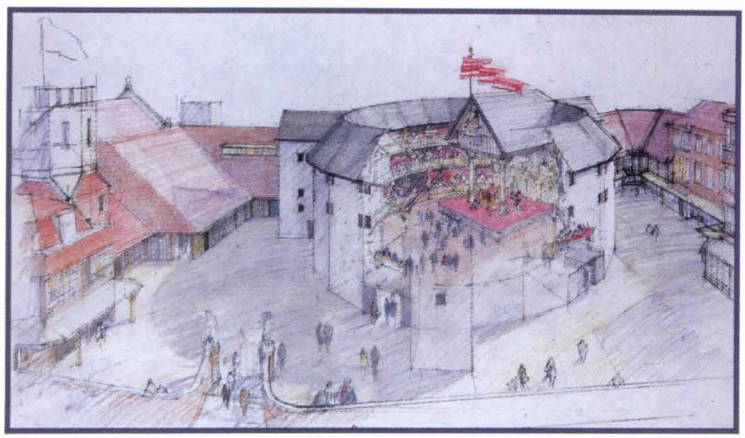
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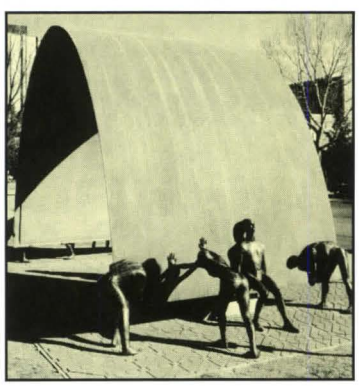
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The reconstruction of London's Globe Theater (above) is one of seven projects in this month's Preservation News which begins on page 43.



Diamond's arch for Calgary Olympics.

Olympic Arches in Calgary

More than half a billion dollars was spent on capital works for the XV Winter Olympic Games in Calgary, but the city has no architecture of consequence to show for it. With the exception of Olympic Plaza, a one-block public space downtown where medal presentations took place, not a single building commission was awarded by competition or solicited from architects outside Alberta, much less outside the country; instead, all went quietly to big Calgary firms.

The New York landscape architecture firm of Friedberg & Partners won a limited design

(continued on page 26)

Saving a Modern Monument

Just under two decades old, the competition-winning Boston City Hall by Kallmann, McKinnell & Knowles has raised a flurry of criticism and even calls for its sale. The tempest began with a capital expenditure report asking for $2.1 million to fix up the building. When quizzed on the cost of repairs, city councilor David Scondras said, "Sell it." The *Quincy Patriot Ledger* published the story, the *New York Times* ran with it, and the *Boston Globe* printed comments back and forth as Robert Campbell, architecture critic for the *Globe,*

(continued on page 30)

Stern Wins Rockwell Museum

Robert A.M. Stern Architects of New York have won the commission for the Norman Rockwell Museum to be built in Stockbridge, Mass. The firm was selected through a limited, invitational design competition over two other participants: Hardy Holzman Pfeiffer Associates of New York and Thomas Gordon Smith of Chicago.

The choice was made by a selection committee of five, which included museum board and staff members, plus two outside consultants: Heinrich Klotz, director of the architecture museum in Frankfurt, and

(continued on page 26)



AP/World Wide Photo

Prince Charles addressing architects in Pittsburgh.

Anglo-American Urban Summit

"Remaking Cities" was the brief but ambitious title of a conference sponsored jointly by the AIA and the Royal Institute of British Architects, March 2–5 in Pittsburgh. Preceded by a R/UDAT urban design study of some economically distressed suburbs in the area, the conference itself was organized into workshops to generate urban development recommendations. The culmination of the event was an address by Prince Charles, who put his blessing on the conferees' call for community involvement in planning.

The overriding theme of this assembly, from the preliminary R/UDAT to the royal address, was community participation. Over and over, one heard the profession characterized as ideally "enablers" for citizen organi-

(continued on page 39)



Robert Stern's winning design for the Rockwell Museum.

Pencil Points

Stuart Wrede has been named director of the department of architecture and design at the Museum of Modern Art in New York. Wrede had served as acting director since the death of former director Arthur Drexler in January, 1987. His appointment closely follows that of Kirk Varnedoe as the next director of MoMA's painting and sculpture department. In both cases the museum conducted extensive searches only to settle on in-house candidates.

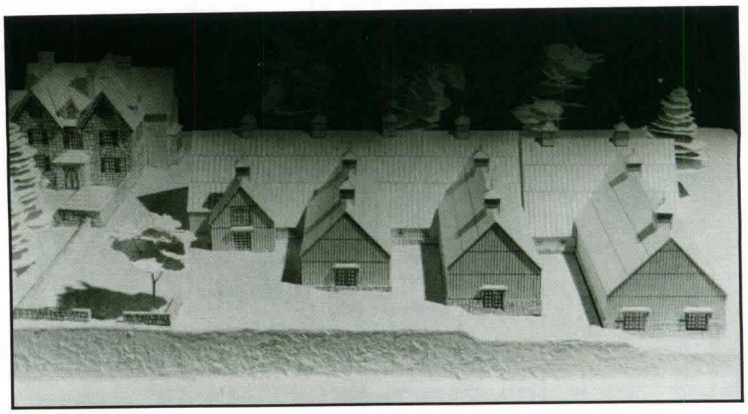
Architects Henry Smith-Miller and Laurie Hawkinson, in collaboration with landscape architects Nicholas Quennell and Pat De Bellis and artist Barbara Kruger have been selected by the North Carolina Museum of Art to develop a master plan for its site.

The Santa Monica Pier is to be restored. Design guidelines for the development and restoration of the historic 67-year-old Pier, which is lined by commercial structures and amusements, were approved in February.

Robert Mark, professor of engineering and architecture at Princeton University, is the latest academic architect to take to television. He starred in "The Mystery of the Master Builders," a March episode of the NOVA series that took viewers on a tour of world monuments, from the Parthenon to the Sydney Opera House. Best known for his research on the construction of Gothic cathedrals, Mark contrasted medieval methods with contemporary practice, concluding that modern-day architects "have lost touch with the principle of the ancient master builders."

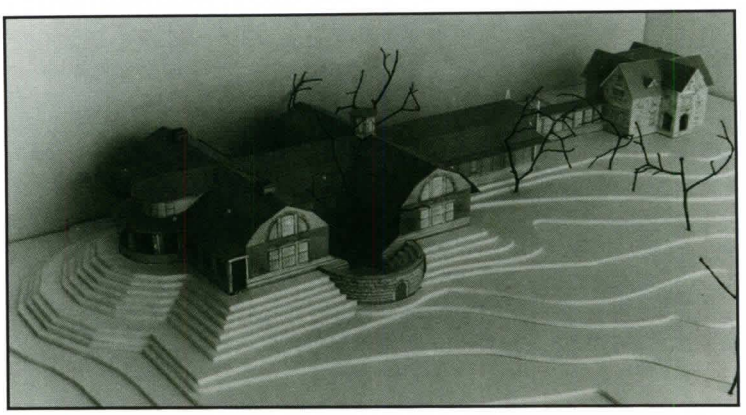
Historic rehabilitation activity has slowed dramatically since enactment of the 1986 Tax Reform Act. A report issued by the National Park Service cites a 35% decline in certified projects, attributed to "changes in income tax structure, depreciation, and passive loss and credit rules."

Kallman, McKinnell & Wood, Boston, have won the 1987 Louis Sullivan Award for Architecture sponsored by the International Union of Bricklayers and Allied Craftsmen.



Nathaniel Feldman

Hardy Holzman Pfeiffer's Rockwell Museum design.



Thomas Gordon Smith's Rockwell design.

Stern *(continued from page 25)*
Thomas Krens, now director of the Williams College Art Museum and recently appointed director of the Guggenheim Foundation.

In developing their design proposals, the competitors had to consider the context of the picturesque New England locality and Rockwell's depictions of small-town life. And local zoning limited the building to a single story, with no more than 12,000 square feet above grade.

The Stern scheme proposes simple volumes clad in white clapboards, with slate roofs, entered through a portico of Classical Revival inspiration. The Smith proposal alludes to a later Shingle Style period, with gambrel roofs and long verandahs. The HHPA scheme takes its cues from local farm buildings, with tall gabled roofs with ridgeline ventilators.

The museum, which now attracts more than 120,000 visitors per year, has outgrown its present quarters, a historic house in the center of Stockbridge. And it can now display only a small fraction of its collection of 600 paintings and drawings by the famous artist/illustrator. The 40-acre site of the proposed gallery already accommodates museum offices, and his Stockbridge studio has been moved there. The new galleries are expected to be open in 1991.

John Morris Dixon ■

Ove Arup 1895–1988

British engineer Ove Arup, founder of Ove Arup & Partners Consulting Engineers and Arup Associates, Architects, Engineers, and Quantity Surveyors, died on February 5 at the age of 92. As the consulting engineer on projects ranging from Tecton's Penguin Pool to the Sydney Opera House and the Pompidou Center in Paris, Arup played a significant role in the development of British Modernism and its worldwide application. His lifelong dedication to the concept of collaboration between architects and engineers is carried on by the multidisciplinary Arup Associates.

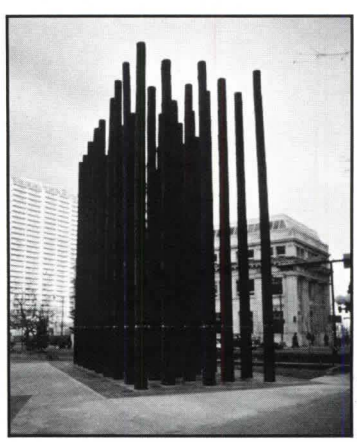
Educated as an engineer in Denmark in the 1920s, Arup did not become involved in architecture until 1933 when he collaborated with Berthold Lubetkin on Highgate 1, a reinforced concrete apartment block in London. Arup's use of reusable formwork on that project pioneered a process that only became common after 1945.

Peter Smithson, one of many well-known architects who worked with Arup, called the engineer "a fixture in the firmament of ideas on how one should build." Arup received the Gold Medal of the Royal Institute of British Architects in 1966 and that of the Institution of Structural Engineers in 1973. ■

Olympics *(continued from page 25)*
competition for Olympic Plaza in association with the Gibbs Gage Partnership in Calgary. Their square is a visual horror—a distant cousin of Charles Moore's Piazza d'Italia complete with neon-striped colonnade.

More promising, if not entirely successful, was a competition sponsored by a subcommittee of the Olympics Arts Festival for the design of a ceremonial arch. Fourteen Canadian practices were invited to submit models for an unspecified site. A jury composed of sculptor Michael Hayden, former Olympic skier Ken Read, and architect Edward Jones selected three winners, by architects Barton Myers Associates and A.J. Diamond and Partners, both of Toronto, and Barry Johns Architect of Edmonton. Johns's arch wasn't constructed because of budgetary constraints.

The jury was unanimous only on Diamond's entry, which was designed by Tony Griffin and Frances Schmitt. This team was one of a few that attempted a recognizable arch; other architects presumably shied away from an image associated with conquering armies. Diamond's 13-foot-wide sheet of Corten steel, clad in gold-leaf on the underside, rises 20 feet at its highest point. Eight life-size figures cast in bronze appear to be



Douglas Curran

"Arch" in Calgary designed by Barton Myers.

raising the arch. The idea was to show the struggle and team spirit underlying the Olympian ideal, but the arch is also an obvious metaphor for architecture. To make the molds of the figures, Toronto artist Colette Whiten chose eight athletes who, wearing skin-tight ski suits, were covered in layers of plaster while posing in positions of pushing, crouching, or heaving. Once dried, the molds were shipped to a local foundry for casting.

The Myers' arch, designed by Myers, John Dale, Douglas MacLeod, and Hagy Belzberg, is

really an anti-arch constructed of 43 black telephone poles, each 35 feet tall, that are massed in diagonal rows to suggest a Canadian forest or the ruins of Olympia. The poles are banded in brass at head height—to signify the Olympic torch? victor's laurel?—and set into a base of polished granite embedded with searchlights and grooved along the edge to recall a finish line.

Neither piece, it turns out, was sited to advantage. It looks, however, as if the Diamond arch, which has proved very popular, will be found a permanent home. ***Adele Freedman*** ■

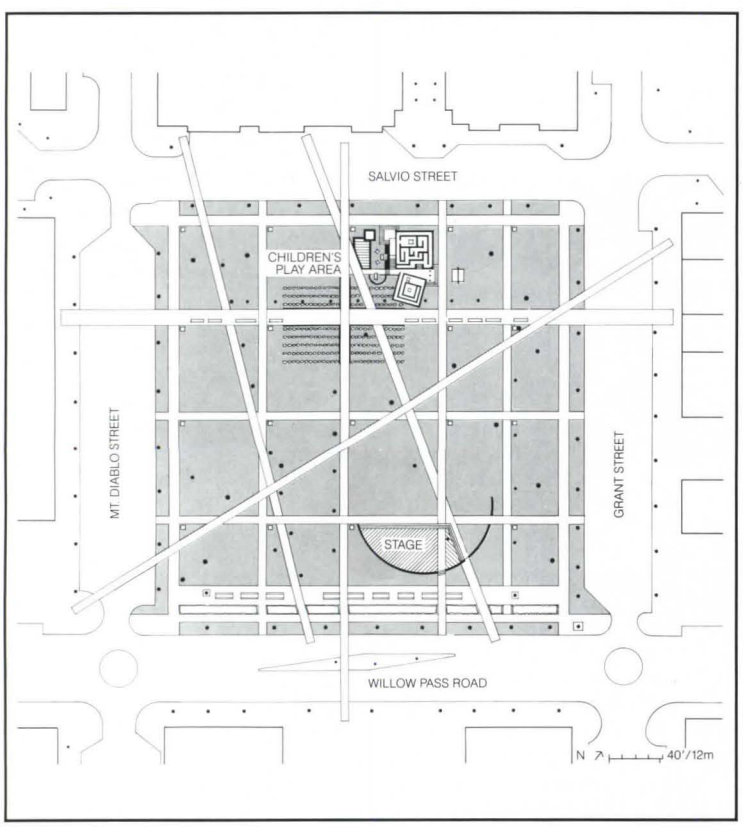
The author is the architecture critic for The Globe and Mail *in Toronto.*

A Park as Art in Concord

The City of Concord, Calif., promoted its design competition for a two-acre urban park as a rare opportunity for art and architecture to intermingle, not merely coexist. Aptly titled "In the Spirit of Collaboration," the contest to redesign the city's 120-year-old town center encouraged entries from interdisciplinary design teams.

Among the 100-odd entrants who answered the call were Peter Walker and Martha Schwartz, a San Francisco-based team. Walker, a teacher and landscape architect (and co-founder of Sasaki, Walker Associates), and Schwartz, a landscape artist who has won public art commissions from Pennsylvania to Oregon, offered a proposal they describe as "based on the idea of cumulative memory." Their plan for Todos Santos Plaza calls for a grid-patterned lawn whose order is upset by diagonal lines of trees and crisscrossing paths, using elements and materials that express the present while recalling the city's Spanish origins, its history as an agricultural center, and its post-war building boom. These "archeological fragments"— arranged in a composition that incorporates new areas for children's play, theatrical performances, and picnicking—are layered in a constructivist collage that treats the entire park as art.

The competition was organized in two stages: an open "idea" phase, judged anonymously, then a second phase for five chosen teams. It also bears more than a superficial resemblance to Bernard Tschumi's Parc de la Vilette in Paris (P/A, July 1987, p. 94). The finalist teams included such nationally known California landscape architecture firms as the SWA Group and EDAW. Michael Pittas was competition advisor, and the all-Californian jury included: Hideo Sasaki, landscape architect; David Robinson, architect; Galen Cranz, architectural sociologist; an artist; a museum director; an arts administrator; and six community representatives. ***Vernon Mays*** ■



Winning Concord, Calif. park design by Walker and Schwartz.

Bank Headquarters, Amsterdam Style

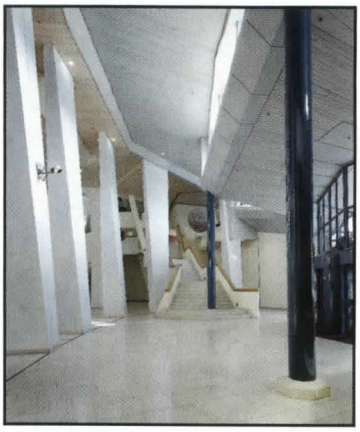
By numbers alone, Ton Alberts's recently completed headquarters for the Nederlandsche Middenstandsbank in Southeast Amsterdam would appear to be Holland's corporate commission of the decade. The six-year, $150-million project consolidates one of The Netherlands' largest banks, previously distributed among five separate and undistinguished buildings in Amsterdam and the neighboring community of Diemen. The new 550,000-square-foot headquarters houses 2500 employees at a key location within a new Bijlmermeer town center (master-planned by Bakema and Van den Broek).

But numbers are not what Alberts emphasizes when he describes the building's design; what interests him is "design process." To an American audience, in a decade when the writings of Team 10 are read as history and architects see themselves primarily as form-givers, this approach, which stresses teamwork above individual inspiration and which values design method as highly as the end product, may seem anachronistic. It is particularly interesting that Alberts's approach, which is based on an egalitarian team-design process, should work so well within the hierarchical corporate culture of a bank.

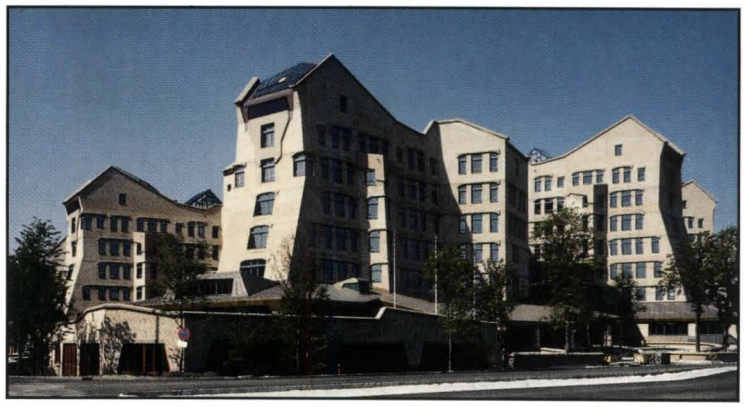
In fact, the benefits have been many, including a design that is well suited to the bank's specific organizational style, which is highly energy-efficient and which projects a strong image on an otherwise bleak, highway-bound site. According to Alberts, it was team thinking more than his own predilection for "organic architecture" that led to the rejection of a monolithically designed building in favor of a casually sited chain of ten office clusters of between five and seven stories. The clusters are strung along an indoor street at the third-floor level above a base of services and parking that elevates the office floors above the adjacent raised highway. Circulation within each cluster is vertical, with elevators and stairs built around a central light-well. The concentration of horizontal circulation on one floor allows for extremely efficient overall use of floor space while giving all floors above the third the ability to accommodate centralized working groups of up to 40 people—a specific client requirement that would prove difficult to accommodate in a more traditional office building with large floors and a central core. Common services—reception, telephone switchboards, restaurants, mailrooms, conference rooms, and a library—line the indoor street on the circulation level, and the activity that these generate makes it an active and inward-looking bazaar, in contrast to the light and unobstructed office floors above.

It is within this street, and to a greater extent on the building's exterior, that the architect's highly personal aesthetic replaces design by consensus. Looking more like Dino de Laurentis's conception of the fantastical planet Dune than a mere national bank headquarters, the building's battered walls

(continued on page 28)



Nederlandsche Bank interior.



Photos: Jan Derwig

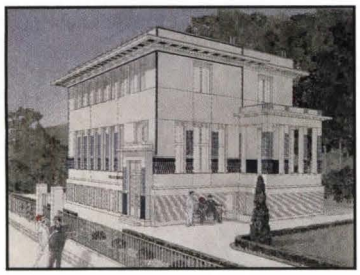
Expressionism in Amsterdam: Alberts's Bank.

Bank *(continued from page 27)*
of hand-made brick, its crystalline skyline and earthbound massing recall the turn-of-the-century Dutch Expressionist buildings of Van de Velde, Kramer, and De Klerk. To a greater extent it is the earlier work of Alberts himself that we see, the big difference being that most of that work consists of residential, not corporate, projects. So it should not be surprising that here we have a corporate office building that looks like Amsterdam School housing, while less than a mile away Rijnboutt, Kromhout, and Ottenhof's now infamous Bijlmermeer housing slabs (1962–73) look like the least distinguished of corporate back-office buildings. It wasn't enough for Alberts that the Nederlandsche Middenstandsbank bought his radical approach to the design process. He also sold this prosperous and powerful bank a new corporate image, at once informal and highly individual. Judging by positive public reaction to date (in contrast to the overwhelmingly unfavorable public reaction to the cool Modernism that characterizes the rest of the Bijlmermeer new town center), Alberts and the Nederlandsche Middenstandsbank gambled and won. ***Graham Wyatt*** ■

The author is an architect with Robert A.M. Stern Architects, New York.

Exploring Wagner's Vision

A street sweeper bends over his broom. A flower girl sits on the edge of a monumental fountain and sells a boutonniere to an aristocratic passerby. A crowd of shoppers and delivery boys swirls around a commercial building. A fashionable young woman arches her head back to capture the confidence of her friend as they stroll across an avenue. These figures invite us into Otto Wagner's *fin de siècle* world of gold light and delicate blue shadows, heraldic arches and sumptuous cathedrals. This is Vienna (and Berlin and San Francisco) as portrayed in an exhibition of the architect's drawings, which is now crossing the United States (Museum of Art & Archeology, Emory University, Atlanta, through May 21; University Art Museum, University of Minnesota, Minneapolis, June 10–Aug. 26; The Wight Gallery, University of California, Los Angeles, Fall 1988). Emanating from the Otto Wagner-Archiv in Vienna and curated by Otto Antonia Graf, it is the most comprehensive exhibition of Wagner's drawings yet shown in America.



Otto Wagner's House, Vienna, 1905.

In it are not just breath-taking renderings but a vision of architecture, culture, and cities that mixes the spiritual, technological, and sensual in designs for government buildings, exhibition halls, museums, bridges, and apartment houses. For Wagner, no fixture of the city—not street lamp or river quai—was to go undesigned. For street-peddler and haute bourgeoisie, architecture was a public art that enriched both the ceremony and small interactions of urban life.

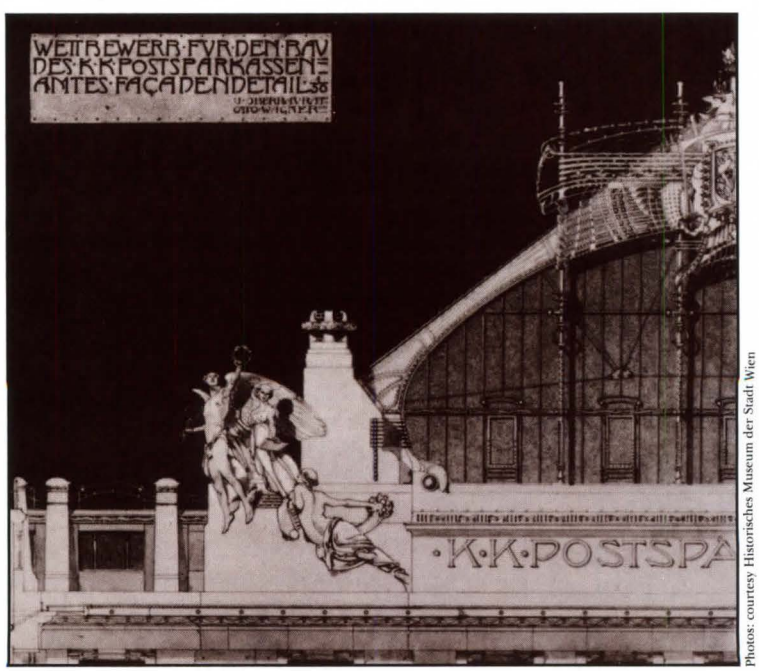
As public works architect (Wagner won the 1893 competition for the comprehensive planning of Vienna), teacher (at the Imperial Art School from 1894 to 1913), and developer (he sponsored as well as designed many of the best apartment houses in Vienna), Wagner was an inextricable part of a late-19th-Century European society that believed in industrial and material progress and in the city as the center of national life. He also walked an architectural tightrope between convention and invention. His debt to Beaux Arts planning is indisputable in the large institutional projects displayed here, even as an emerging Secessionism expresses the new technologies of glass and iron.

Organized chronologically, the drawings demonstrate the reductivist process of Wagner's maturation. From early work such as the 1863 Stock Exchange to the 1899 Modern Gallery with its monumental Secessionist frieze, and on to the "stripped Classicism" of his late work with its poetic allusions to ruins, Wagner manipulates scale, detail, and material toward the explication of project program.

Remarkable are sketches for such projects as the 1897 National Monument and 1898 Academy of Fine Arts, which are rendered in an architectural shorthand of sharp lines, self-assured poché, and statuary that seems to flutter under the designer's hand.

Very occasionally, Wagner disappoints, as he does in the 1911 Great City, his proposal for a new Vienna where an architectural determinism produces an oppressive monumentalism, and in the 1890 Berlin Cathedral, where the tension between convention and invention becomes a cacophonous battle of the Neo-Classical and Art Nouveau.

After such excesses, one pauses for refreshment at the Schinkel-inspired fountain where the flower girl awaits. She and other Wagner figures walk, ride, and work around the gallery walls, oblivious to the architect's contemporary critics (who decried his work as "Assyrian-Babylonian idiot style" and—heinously—as "L'art Juif") and to the impending European crisis that would smash their world. ***Roy Strickland*** ■



Wagner's Postal Savings Bank, 1910.

Photos: courtesy Historisches Museum der Stadt Wien



La Farge window from Hay House, 1893.

Museum of Fine Arts, Boston

La Farge Show in Boston

Muralist for some of the major buildings of his period, craftsman and inventor of stained glass at its finest, confidante to Henry James and Henry Adams, watercolorist and portraitist—John La Farge (1835–1919) was a true hero of the American Renaissance. Above all, however, he was its supreme sensualist. The stained glass windows stationed in a darkened chamber of Boston's Museum of Fine Arts glow with a splendor that invites gasps from the visitors to the traveling retrospective on view there through May 1.

The discovery that La Farge not only designed the windows patterned with flowers, birds, and human figures but invented their chemical composition and guided their craftsmanship will amaze those used to the popular oeuvre of Louis Tiffany. Yet, not until 1875, at the age of 40, did La Farge begin the collaboration with H.H. Richardson that would result in his extraordinary murals, the best known of which are in Trinity Church, Boston, the stained glass that revived an art form unexplored since the Middle Ages.

These glass masterworks are so wonderful, and the example of collaboration so interesting in light of today's revived concern for architectural ornament, that one would have gladly foregone much of the weaker art in the show for photographs of other windows and an elaboration on

(continued on page 30)



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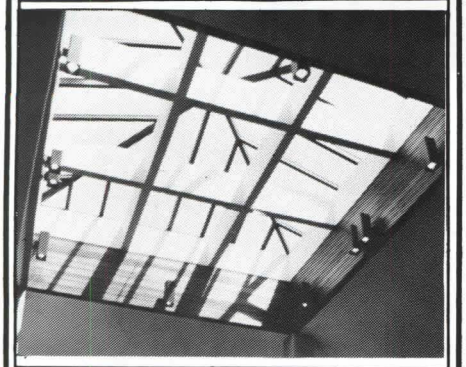
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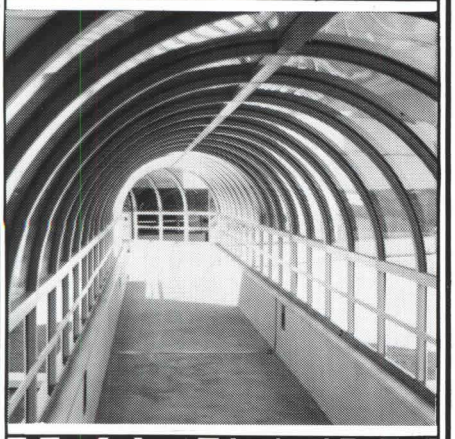
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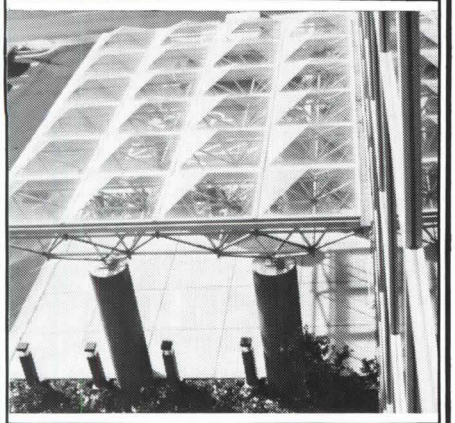
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La Farge *(continued from page 28)*
the technical inventions that produced them. As both color-giver and form-maker, La Farge had no peer.

Though a catalogue raisonné of La Farge's work is underway, the exact whereabouts and appearance of the 300 windows by this genius of the medium await itemization and dissemination. Like the artifacts of Frank Lloyd Wright that have been wrenched out of their architectural origins, the La Farge windows on view are sadly severed from their source. The splendid 1878 morning glories, his first glass collaboration with H.H. Richardson, for example, were found in an attic in the William Watts Sherman house in Newport, R.I., in 1960 by Richardson scholar James O'Gorman, who donated them to the Museum of Fine Arts. Apparently, the old folks in what was by then elderly housing had taken them out to get more light. The windows from the Ames house in North Easton were sold at auction. A similar fate met of the other stained glass windows here whose presence makes us wish for more on what might be a spiritual walking tour.

Jane Holtz Kay ■

City Hall *(continued from page 25)*
rose to the building's rescue.

Despite its heft, City Hall cannot hold all the burgeoning municipal agencies, which must lease space elsewhere. The structure, a labyrinth wrapped around an atrium, also confounds visitors. The fifth floor, for instance, is the second floor when entered from the front and bears the label "Mayor" on the pushbutton in the elevator. And the ceremonial staircase leads nowhere, especially since the once-public gallery at its summit was converted to offices.

Much of the needed repairs compensate for misdemeanors of time and changes in technology—to make the building handicapped-accessible, for example, or to replace oversized locks no longer serviced by key-makers. Other problems stem from lackluster maintenance and wayward graphics. On a mid-February afternoon, the entry/atrium offered a visitor a panorama of half a dozen limp dracaenas, a black bulletin board with no notices, a cork bulletin board aflutter with them, some confusing "moved to . . ." signs, and a "temporarily out-of-order" sign on a revolving door that had been seen the previous summer.

Far more dismaying is the vast and unfriendly plaza that surrounds the building like a brick moat. Designed to follow I.M. Pei's Government Center master plan, this grandiose space and its lack of amenities led even the *Boston Business Journal* to solicit invitations for enhancement a year or so ago. Plans now afoot will restore the plaza's original waterworks and enhance their year-round appeal by adding a winter solstice steam-and-sound fountain titled "Winterbreadth" by Joan Brigham and Chris Janney. Other plans could enliven the rest of the acreage. It is harder, however, to imagine how the formidable wall of City Hall on the Congress Street side could be made more congenial to the Faneuil Hall and Quincy Market activities that it borders.

Despite such necessary retrofits and revitalizations, City Hall is a period piece that deserves some forbearance—not to mention admiration—as a work of architecture and art that few today could equal in terms of the boldness and purpose of its civic posture. A strong expression of late Modernist architecture, the building may be at the nadir of its public appeal. But if the current intolerance of Boston's City Hall makes the architects lament the dating of their design in the popular mind, the critical defense of the building and the positive concern of so many Bostonians with shaping—or reshaping—the city to their liking are more auspicious signs.

Jane Holtz Kay ■



Cervin Robinson

The beleaguered Boston City Hall.

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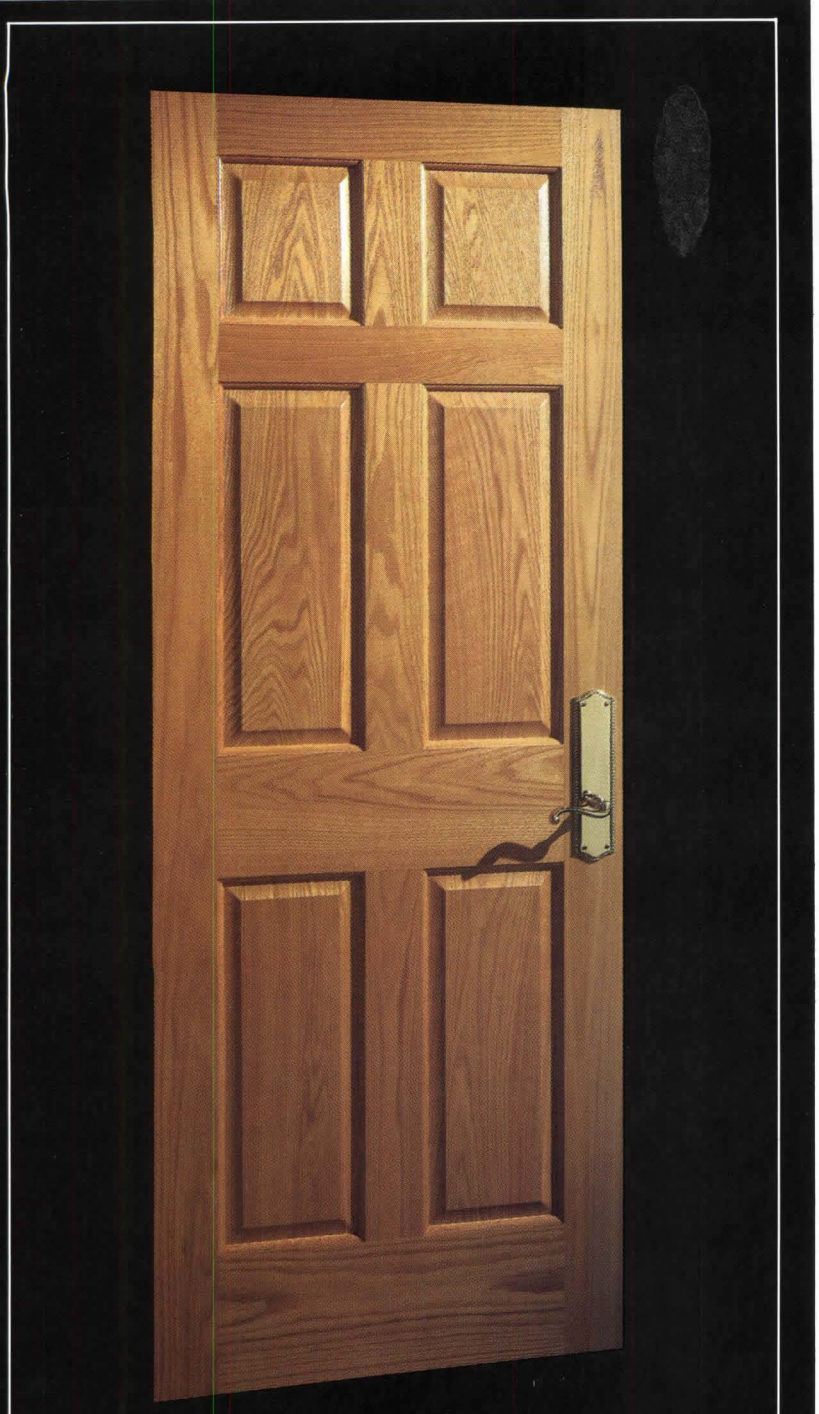
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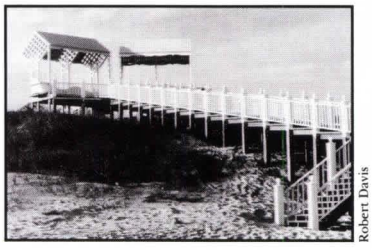
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Kurt Williard

New office building (foreground) complements the Corcoran.



Robert Davis

Seaside Beach Pavilion.

Wood Awards

Six structures have been honored in the American Wood Council's 1987 Nonresidential Wood Design Award Program. The Honor Award went to architects Fay Jones & Maurice Jennings of Fayetteville, Ark., for the Crosby Arboretum Interpretive Center, Picayune, Miss. (P/A, May 1987, p. 104).

Merit Awards went to the Perspi-ca-city Market, by Deborah Berke Architect & Associates, New York, and the Ruskin Street Beach Pavilion by Stuart Cohen & Anders Nereim Architects, Chicago; both projects are located at Seaside, Port Washington, Fla. Other Merit Awards went to the Atwood Barn, an agricultural building in Glen Ellen, Calif., by Dutcher & Hanf, Architects, Berkeley, Calif.; and Whitfield Square, a mixed-use remodeling project in Guilford, Conn., by Jackson & Page, Architects, Guilford.

A Citation Award went to Shen/Glass Architects of Berkeley for their Mathematical Sciences Research Institute at the University of California, Berkeley, one of the largest wood-frame buildings in the Bay Area.

The jurors for this year's competition were: William T. Cannady, FAIA, of Cannady, Jackson & Ryan Architects, Houston; Doug Kelbaugh, AIA, Chairman of the Department of Architecture, University of Washington, Seattle; Melanie Taylor, Orr & Taylor Architecture & Gardens, New Haven, Conn.; and Mark Simon, AIA, Centerbrook Architects, Essex, Conn. ***Pilar Viladas*** ■

Corcoran Plans An Office Building

The Corcoran Gallery of Art in Washington, D.C. will soon add to its holdings a 100,000-square-foot speculative office building. In so doing, the gallery follows a pattern set by the Museum of Modern Art in New York which built an apartment tower in 1984 to provide revenue for Museum programs.

The Corcoran's new building, which goes under construction next to the gallery this summer, will replace its unfinished rear façade with a new elevation in the same style as Ernest Flagg's 1897 original. The design by Hartman Cox of Washington matches the Corcoran's cornice lines, materials, and Beaux Arts details. The office building will stretch a short seven stories above grade—in keeping with the Corcoran's size and Washington's height limits—with four levels of parking underground.

Gallery administrators have not determined what sections of the new building it will occupy or the uses to which these spaces will be put, although they are considering housing the art school in the basement.

Leslie M. Freudenheim ■

The author is a writer and preservationist living in Washington, D.C.

Michael Graves, First Quarter Century

In the fall of 1962, Michael Graves, fresh from his Rome Prize sojourn, joined the Princeton University School of Architecture and Urban Planning. In February, a celebratory symposium and exhibition took place at Princeton in recognition of his 25 years of teaching.

History and its uses was the theme of the day, beginning with Anthony Vidler, who discussed the role of history as a vehicle of theory and applica-

(continued on page 34)

A View Through TRACO's Elegance and Strength



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Graves *(continued from page 32)*
tion, caught between usefulness and uselessness. Peter Eisenman, in homage to the influence of Colin Rowe, described the search for a "center" that is neither nostalgic nor univocal. Mary McLeod outlined forces of change affecting the discipline, including the role of women and new interdisciplinary theories of semiology and deconstruction. A low-keyed Robert Venturi recalled his time at Princeton, then "a backwater" where history was merely part of the curriculum, not tied to ideology. The result, he said, was the nondoctrinaire use of history as analogy. Robert Stern reviewed the diverse trends of the 1960s and '70s, while Frank Gehry simply presented his recent work. Other speakers included Dimitri Porphyrios, Alan Colquhoun, and Lynn Breslin.

Historian Irving Lavin was the first speaker to recoil from the recent promotion by the press of "deconstructivism" as a new aesthetic. The subject emerged again in a concluding panel. Dean Robert Maxwell took exception to deconstructionism as a didactic tool, questioning what he called "the wisdom of uncertainty." Porphyrios contended that architecture had to do with certainty, raising the question of how one teaches what Gehry called "De-Con."

Michael Graves himself addressed the audience in closing remarks on the reasons for his remaining at Princeton, explaining that to teach is to learn about architecture.

A related exhibition at the School of Architecture represented an iceberg tip of Graves's design career. Examples of student designs for the same program produced in Graves's studio over the years showed that the issues he raises remain open to exploration.

Perhaps the most poignant aspect in this celebration of Graves's academic career was the fact that Princeton's policy, which forbids commissioning work from faculty, has prevented the university from building a physical manifestation of its most significant teacher in architecture over the past quarter century. ***Peter Papademetriou*** ■

Mixed Results for L.A.'s Biltmore

The recent renovation of and addition to the Biltmore Hotel in Los Angeles (P/A, May 1985, p. 24) raise the question of how to add to a historic building without marring its integrity. Designed by Schultze and Weaver in 1923, the hotel is one of the oldest in downtown L.A. and forms a significant anchor on Pershing Square. While the tower addition borrows from the formal vocabulary of the original Biltmore, an inflated Italian palazzo, the project as a whole undermines its strong composition.



Wayne Thom Associates

The Biltmore Tower, adjacent to the Biltmore Hotel.

The hotel and an adjacent corner lot were sold in 1984 to the Westgroup, who proposed to build a 24-story office tower and 10-story parking annex. (The development has since been sold to First Boston Corporation.) Unfortunately, the new owners decided to radically reconfigure the hotel, transforming almost 300 guest rooms along Grand Avenue into office suites, called the Biltmore Court, and reorienting its entrance lobby from Pershing Square to the base of the new tower. The *(continued on page 36)*

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L.A. *(continued from page 34)*
latter decision not only made nonsense of the hotel's strong formal plan, which conceived of the entrance as a grand living room on a park, but also showed utter disdain for local efforts to revive Pershing Square.

The addition succeeds somewhat better on the top than it does on the ground. Designed by the Landau Partnership, the tower takes its cues from the original hotel, using similar brick (from the original clay quarry) with limestone quoins, and a continuous bay on all four elevations that echoes bays on the rear façade of the adjacent hotel.

Although the architects clearly took great pains to flatter the original building through imitation, the transferral of cosmetic details from a mid-rise building to a tower of radically different scale has an extremely unsettling effect. This is most apparent in the parking annex adjacent to the hotel, which is clad in brick and devoid of decoration except for horizontal courses and quoins. The appearance and scale of this new building would have been greatly enhanced by the introduction of "blind" windows. Without them, the gesture of matching the hotel brick and quoins is entirely meaningless. One wonders if a more effective homage could have resulted from using similar materials in a more contemporary statement.

The nicest thing about the tower is its top, and the architects are to be applauded for its design. An octagonal, gabled copper-clad roof, with bay windows on four sides, it is certainly the most interesting recent addition to the L.A. skyline and sets an excellent precedent for how to disguise a rooftop helipad.

The interiors of the remodeled hotel, designed by a series of architects and decorators, are a clear case of "gilding the lily." When Phyllis Lambert and Gene Summers carried out their restoration of the Biltmore in the 1970s (P/A, Nov. 1978, pp. 66–71), they simply cleaned up the public rooms while redecorating the guest suites. The new designers repainted much of the decoration in the public rooms, changing some colors and adding gold leaf. In the former entrance lobby, now used as a secondary entrance and meeting area, they introduced a baroque, cast-concrete fountain and a collection of period furniture. In short, they transformed a dignified, although elaborate, design into a riot of competing ornament. ***Barbara Goldstein*** ■

AIA Awards

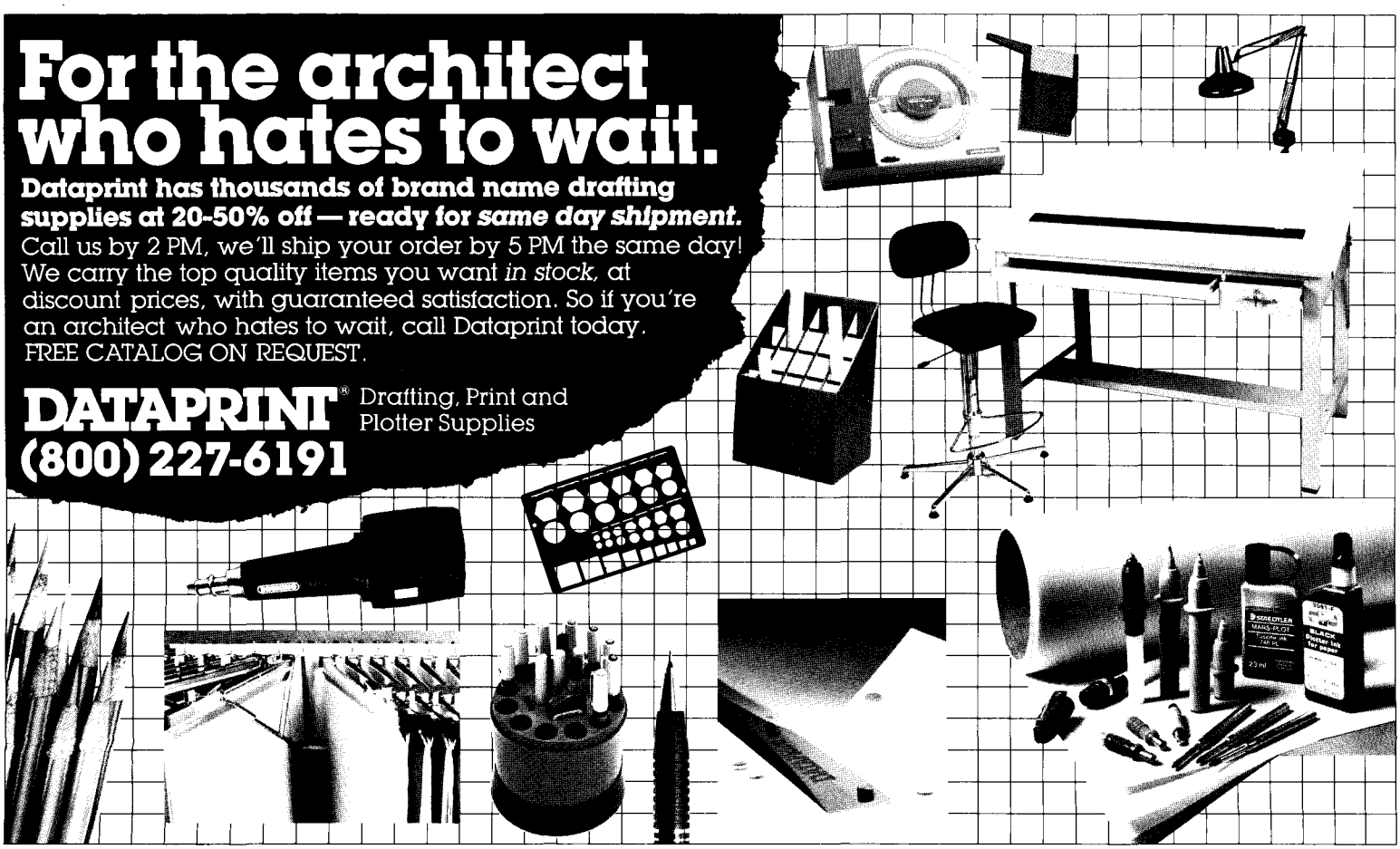
'Tis the season for AIA Awards, Honorary Fellowships, and Institute Honors, and the list is long. Among the six recipients of Institute Honors is architectural historian Spiro Kostof who hosted the five-part television series "America By Design" (See P/A, Oct. 1987, p. 27). Sculptor Robert Smithson and playwright/designer Robert Wilson are honored for their contributions in environmental art and set design or staging respectively. Graphic designers Sussman/Prejza & Company of Santa Monica, Calif., are credited with defining a new, collaborative discipline of "urban enhancement," exemplified by the 1984 Olympics in Los Angeles.

Also honored are the Society for the Preservation of New England Antiquities, Boston, and the Loeb Fellowship in Advanced Environmental Studies, which has supported independent study programs at Harvard University for over 200 mid-career design and planning professionals.

Ten architects from eight countries have been named 1988 Honorary Fellows of the AIA. The recipients are Lodovico Barbiano di Belgiojoso, Italy; Trevor Dannatt, England; Pierre-Andre Dufetel, France; Yehya Mihamed Eid, Egypt; Roderick Peter Hackney, England; Tao Ho, Hong Kong; Matti K. Makinen, Finland; Ernst A. Plischke, Austria; Kazuo Shinohara, Japan; and Terence J. Williams, Canada.

Hartman-Cox Architects of Washington, D.C. have been selected to receive the 1988 Architectural Firm Award. "They do not show off," wrote one sponsor about the firm's understated architecture. The architects have played an integral part in D.C.'s building boom, contributing such works as the Folger Shakespeare Library and 1001 Pennsylvania Avenue, setting for the recent film *Broadcast News*.

Finally, David P. Lewis, FAIA, of UDA Architects, Pittsburgh, has received the Edward C. Kemper Award for service for his contributions to the profession and involvement with the AIA's Regional/Urban Design Assistance Teams (R/UDAT) program (see page 25). Habitat for Humanity, a Georgia-based nonprofit housing corporation, won the Whitney Young Award. ■



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Urban Summit *(cont. from page 25)*
zations which would be their clients. Centralized planning and insensitive bureaucracies were repeatedly castigated as the causes of community development failures in both countries.

Organized and chaired by architect/planner David Lewis of Pittsburgh, the event clearly had a socially conscious, anti-Establishment flavor. Presiding at some sessions was Rod Hackney, President of ARIBA, who won his position as part of an insurgent faction promoting the concept of "community architecture" and sharing Prince Charles's scorn for orthodox planning and Modernist architecture. His counterpart on the program, AIA President Ted Pappas, though not known as a revolutionary, was supportive here of community involvement, which for 21 years has been the basis of AIA's R/UDAT process.

The Mon Valley R/UDAT
In the four days preceding the conference, a team of 18 architects, planners, economists, sociologists, developers, and others from the U.S. and Britain took part in a R/UDAT (Regional/Urban Design Assistance Team) study of three Monongahela Valley communities outside Pittsburgh, which are dominated by the steel mills whose closings have left tens of thousands unemployed. Their recommendations combined physical steps with less tangible objectives—a major one being to convince the local populace that the mills are not going to be magically revived. While recommendations varied for each town, all involved recapturing public access to riverfronts now walled off by vacant steel plants. Green public spaces were advocated, not just for prettiness, but also as lures for new industrial and office development. Improved road and transit links to downtown Pittsburgh were proposed for these previously self-contained communities, but not the sometimes proposed freeway swooping along these ten miles of river.

One element tending to undermine the authority of the report was the proposed Festival Garden for the town of Homestead. This proposal to reclad a huge steel mill in glass as the centerpiece for a horticulture fair might just turn out to be economically workable (as it reportedly was for a smaller Liverpool site), but it was quickly picked up by local media as the kind of thing a committee of outside experts dreams up.

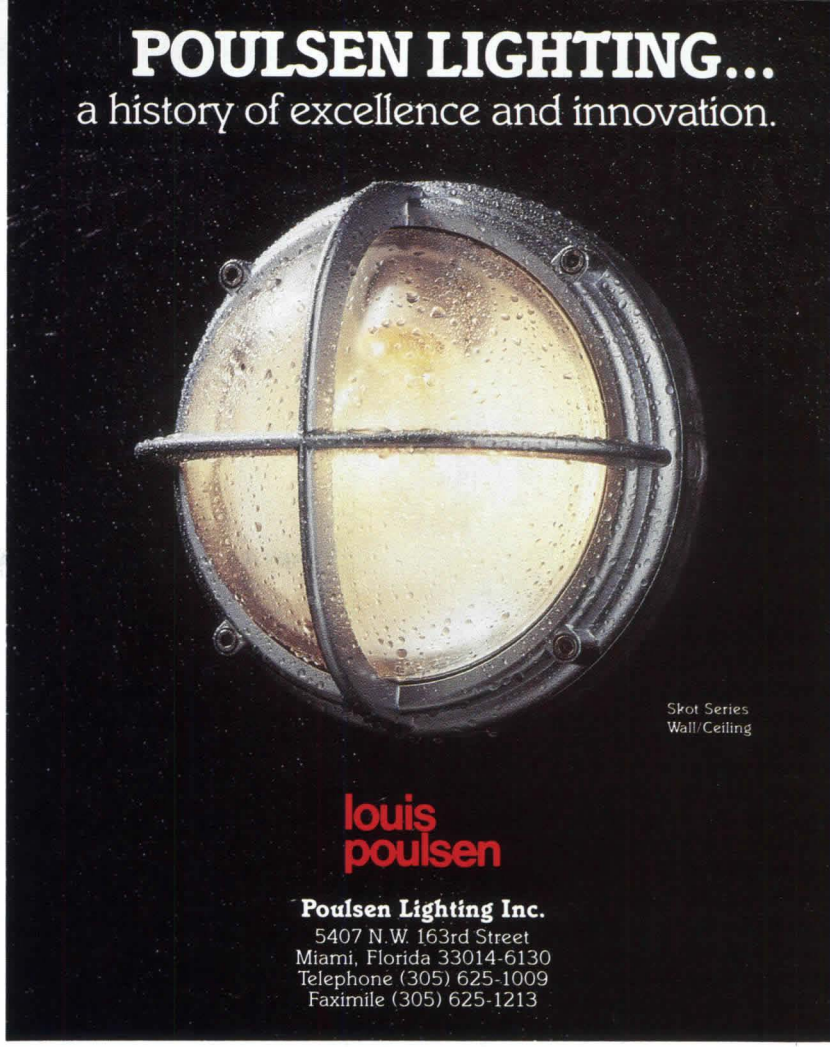
The stage for this conference was set at a 1986 Anglo-American "urban futures" conference in London. Here on the outskirts of Pittsburgh, British architects and other experts took part for the first time in an American R/UDAT, and they are now adopting the concept for use in Britain. American conferees, while exporting a device of proven value to Britain, were able to learn from the community architecture experiences over there, particularly from community leaders and architects in such cities as Liverpool and Newcastle-upon-Tyne, who explained some of their anti-bureaucratic political savvy at the Pittburgh event.

A Workshop Conference
The nearly 400 paid attendees at the conference were largely American architects with an interest in urban redevelopment, many of them members of AIA's Urban Design Committee, many from large, established firms. Mixing with invited community-oriented professionals from the U.S. and abroad, they divided into workshop teams to discuss specific problems.

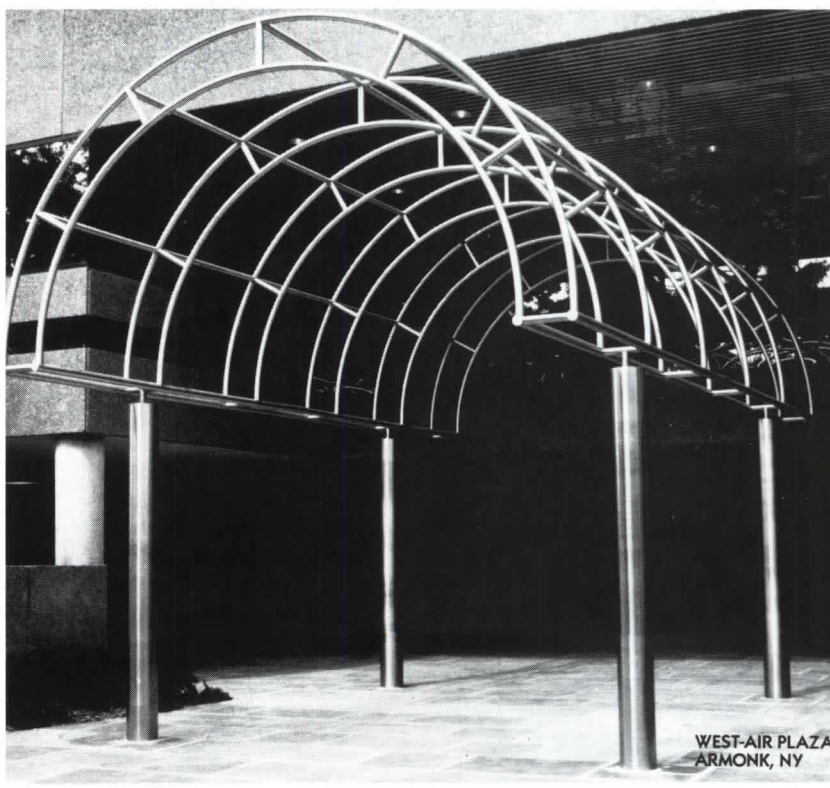
On the whole, their recommendations were idealistic, with many passages reminiscent of the 1960s, but they also reflected the conservative political mood and scarcity of national funding in both countries. While there were calls for central government help, recommendations concentrating heavily on ways to reallocate local government expenditures, channel private investment, and use various public-private linkages.

The Advocate Prince
In his appearance at the end of the conference, the Prince (honorary chairman of the event) delivered no new blockbuster opinions or critiques of Pittsburgh buildings. He simply and rather eloquently reiterated his message that the plight of the urban poor demands effort in which success hinges on their participation. While expressing his admiration for experts, he warned that we must not be intimidated by them. In terms of architectural design, he called for "an acceptable, if reminiscent, vernacular" and for "embellishment for the sheer joy of beauty," but he stressed the need to "re-create communities" with which residents can identify, which will "make it possible for children to grow up respecting other people's property."

John Morris Dixon ■



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Preservation News

Among the salutary reports in Preservation News are the completion of the West Capitol Front and the reconstruction of Shakespeare's Globe Theater. The Art Deco Silver Spring Shopping Center, on the other hand, remains threatened with demolition.



Restored West Front of the U.S. Capitol.

All Quiet on the West Front

After nearly 20 years of heated public debate, Congressional wrangling, and continued deterioration, the Central West Front of the U.S. Capitol has been beautifully restored. The restored façade is the sole visible exterior portion of Dr. William Thornton's original 1791 building (as later amended by Benjamin Latrobe, Charles Bulfinch, and a host of others).

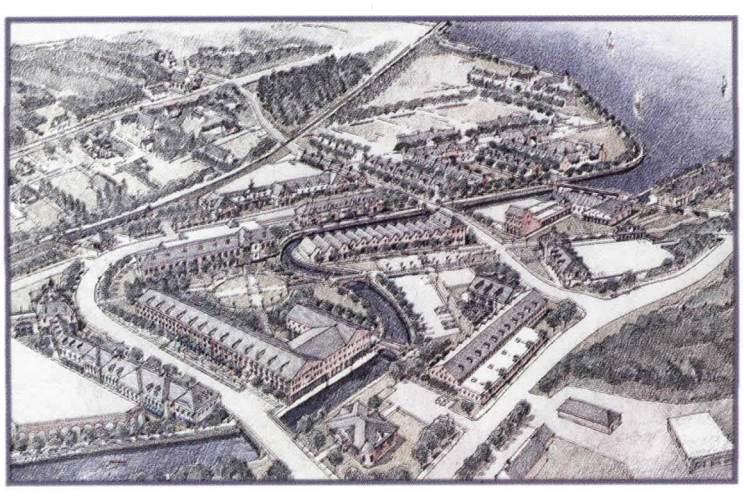
The office of George M. White, FAIA, the Architect of the Capitol, was aided in the restoration by the National Bureau of Standards and consulting engineers Amman and Whitney, using specialized products and exacting treatments developed by ProSoCo, Inc., of Kansas City. Until running into staunch opposition from the American Institute of Architects and the National Trust for His-

(continued on page 47)

Renewed Mill Town

"We're trying to recapture the feeling of a 19th-Century town, where people live, work, and shop all within walking distance," says Southport, Conn., architect Roger Ferris of his plan for the 150-year-old Gilbert and Bennett wire factory in Georgetown, Conn. The 55-acre mixed-use development will enjoy two exceptional amenities: a river running through the site and a collection of fine brick mill buildings. The latter will be renovated for offices, shops, restaurants, and artists studios. Also planned are 450 housing units, including apartments, condominiums, and elderly housing.

Georgetown grew up around its factory, and this development reinforces that relationship, providing a dense "downtown" of offices and retail. The small town model prevails wherever possible, in the "town green" and the new main street, called Main Street, of course. ■



Scheme for Georgetown, Conn. wire factory by Ferris Architects.



Richard Longstreth

Silver Spring Shopping Center and Theater (rear).

Saving Silver Spring

A four-year battle to save the Art Deco Silver Spring Shopping Center and the adjacent Silver Theater in Silver Spring, Md., has heated up again. The 1930s strip shopping center—one of only four extant Art Deco strips in the country according to architectural historian Richard Longstreth—is threatened by its 1980s counterpart, the regional mall.

Developer Lloyd Moore, who has an option on the site, would demolish the shopping center and adjacent theater—a classic design in its own right by movie palace architect John Eberson—to make way for his mall, which is only part of a massive mixed-use development that also includes a hotel and four office towers designed for Moore by Virginia architects Dewberry & Davis.

Opposition to Moore's proposal has coalesced around the two issues of traffic and preservation. An ad hoc coalition of over 20 citizen groups argues that the development is simply too big for Silver Spring, while preservationists urge that the

(continued on page 44)

Silver Spring *(cont. from page 43)*
existing strip be preserved for both architectural and social reasons. "It's not a matter of whether or not you like Art Deco," says Richard Striner, President of the Art Deco Society of Washington. "This complex played a significant role in the development of a building type."

"We're not saying you can't have new construction," Striner explains. In fact, a study commissioned by the County Planning Board and the Maryland Historic Trust concluded that "it is possible to add a significant amount of density to the site while preserving the theater and shopping center." Other developers have since substantiated the viability of more modest solutions that incorporate the historic structures.

Moore's plan, however, has the support of County Executive Sidney Kramer who actively opposed nomination of the shopping center and theater to the National Register of Historic Places. While landmark status can't save the Silver, "it would put us on the moral high ground and establish its historic significance beyond a reasonable doubt," says Striner, who expects that nomination to be approved this month by the Maryland State Historic Preservation Officer. It is also expected that the Maryland Capital Park and Planning Commission, which reviews the project, will press for preservation. ■

The Globe Goes Ahead

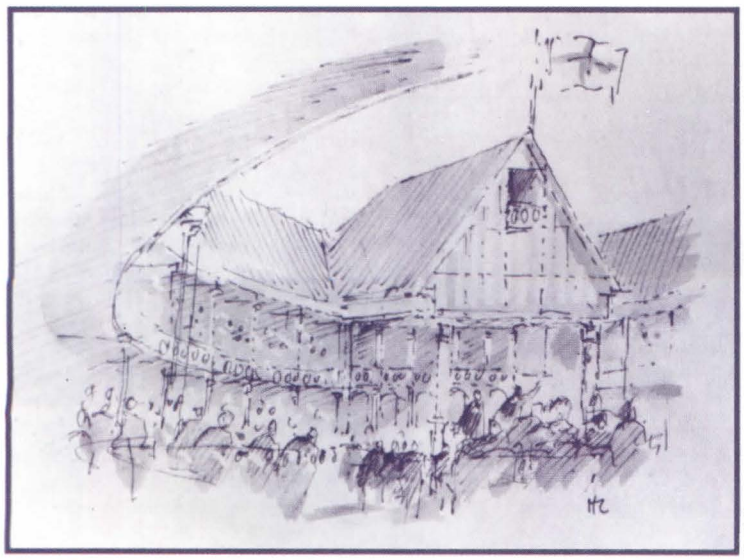
After nearly 18 years of start-ups and setbacks, plans to reconstruct the Globe Theater on its original site on London's South Bank are proceeding apace. The new Globe will replicate the 1599 original where Shakespeare's plays were first performed, on a site in the Southwark District only yards from its original location. The reconstruction begins on the 23rd of this month.

Project architect Theo Crosby of Pentagram, London, says the only concessions made to modern audiences are an increase in the number of fire exits from two to five and a reduction in the number of seats from 3000 to 1500. Crosby's theater will have a tiled roof, as did the second Globe, which replaced the first, thatch-roofed theater after it burned down in 1613. But there will be no roof at all over the center seats, and no artificial lights. Theater-goers will sit on backless benches, as in Elizabethan times.

A second theater on the site will replicate the 400-seat Phoenix playhouse, designed by Inigo Jones in 1616. Development plans also call for a museum of Elizabethan theater to be located beneath the entrance plaza, a restaurant, shops, and five apartments, the sale of which will help defray building costs.

The complex is the brainchild of Chicago-born actor and director Sam Wanamaker, who has collected endorsements for his scheme from notables ranging from Prince Philip, the Duke of Edinburgh, to President Reagan. American millionaire Gordon P. Getty is heading the U.S. portion of a £15 million fund-raising drive.

The project cleared a major legal hurdle last year when the Southwark Council, which had attempted to stop it, agreed to a £7.2 million out-of-court settlement, followed rapidly by planning council approval. Construction, which will take a minimum of three years, will proceed as funds become available. ■



Hugh Casson

The Globe interior.



James C. Smith

New towers above the renovated Union Station in Chicago.

Gateway to Chicago

Sixty years after its construction, Chicago's Union Station will get its tower. Although the 1925 design by Graham, Anderson, Probst & White called for a 22-story tower rising above the rail terminal, only eight stories were ever completed.

The top four of those floors will now come down, making way for not one but two towers designed by Chicago architect Lucien Lagrange for U.S. Equities Realty. The twin towers, 700,000 square feet each, will cantilever over a magnificent 115-foot-high barrel-vaulted waiting room in a complex structural configuration engineered by Eli Cohen of Chicago. Lagrange expects the "piggyback" construction to add a premium of $14 to 15 dollars per square foot to the cost of construction, bringing the total project price tag to $180 million.

The waiting room itself is to be restored. "We don't want a Rouse-type development," says Lagrange, who nevertheless expects to surround the space with 80,000 square feet of stores.

Although the Station is not a landmark, the developers have negotiated an easement agreement with the Chicago Landmark Commission. The arrangement, which covers the façades, the main waiting room, and some subsidiary spaces, is a first for the city. ■

The Magnolia Blooms

In 1936, the building was something of a cultural scandal, its planar surfaces and crisp edges a bit understated for prevailing tastes. But William Lescaze, who by then had collaborated on the Philadelphia Savings Fund Society building, was not swayed. His design for the Magnolia Lounge, located in Dallas's Fair Park, was perhaps the first example of International Style Modernism in Texas. By the time city leaders recognized its worth, the Magnolia's once-dazzling theater was caving in. Now restored, the building benefits from the restraint of Dallas architects Thomas & Booziotis. Alterations required by the code, such as a new stair from the second-story terrace, were sympathetic. And, as one steps into the lobby through porthole doors, the glass-block wall, checkered rug and sleek furniture evoke a clarity that reflects well on the early Moderns. ***Vernon Mays*** ■



Wayne Thom Associates

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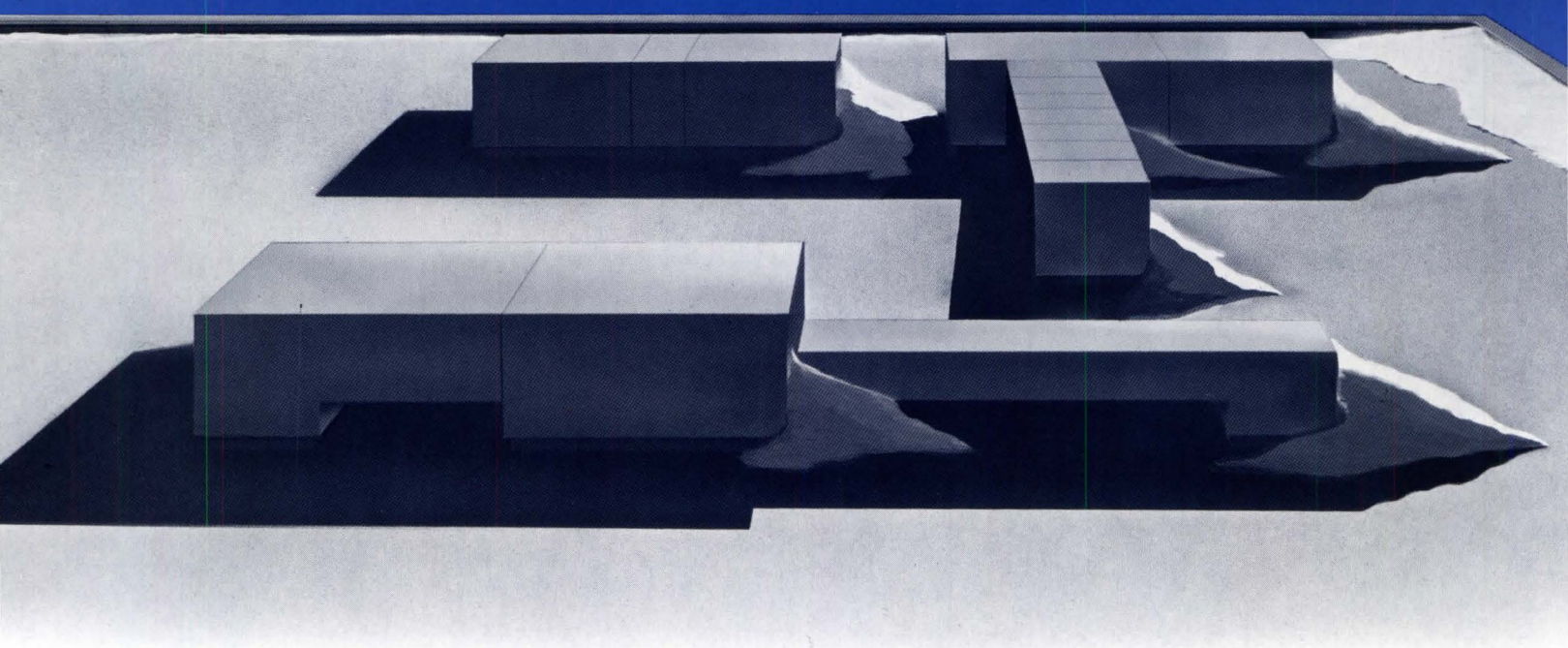


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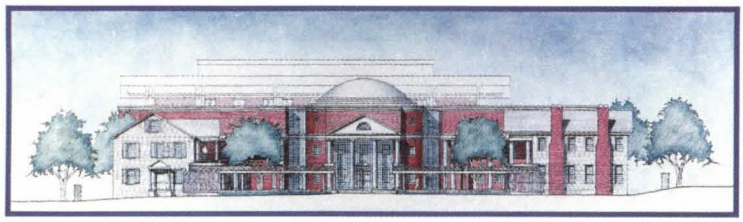
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Florida State University's College of Law.

Floridian U. Va.

Part preservation, part inventive reconstruction, the College of Law Village Green is Florida State University's answer to the University of Virginia. Architect Raoul Rodriguez of Rodriguez Khuly Quiroga Architects, Coral Gables, modeled his addition to the Florida State law school on Thomas Jefferson's Lawn at the University of Virginia.

While the Jeffersonian Rotunda building is Rodriquez's design, the four houses that flank it are classic Tallahassee houses, dating from the 1830s and 1840s. The architect credits his client, Dean Talbot D'Alemberte, with the rather novel notion of soliciting donated houses from that period, which he considers the golden age of local architecture. The FSU Foundation paid the costs of moving and restoring the houses, supported in part by in-kind contributions from local organizations, including the police department, which provided free escorts, and the local cable company, which lowered its cables free of charge.

The $2.4 million rotunda building, which will house classrooms and administration, should be completed in time for the fall semester. Two houses have been restored as office space; a third was moved last month; and the school is now searching for a fourth to complete its green. ■

Capitol *(continued from page 43)*
toric Preservation in early 1983, the Architect of the Capitol had other designs on the West Front. With projected costs that made even members of Congress shudder, the office had proposed a four-story buttressing extension that would have added between 22 and 60 feet to the building perimeter, for about 150,000 square feet of additional usable space.

A joint letter from the presidents of the AIA and the Trust said that this approach to the West Front would "entomb it in a costly and inappropriate" addition. After a booming May 1983 rally (which staff members of the AIA and the Trust were paid to attend), Congress defied expectations and the preferences of several key leaders by opting for restoration. Entombment—and, with it, the extension—was out.

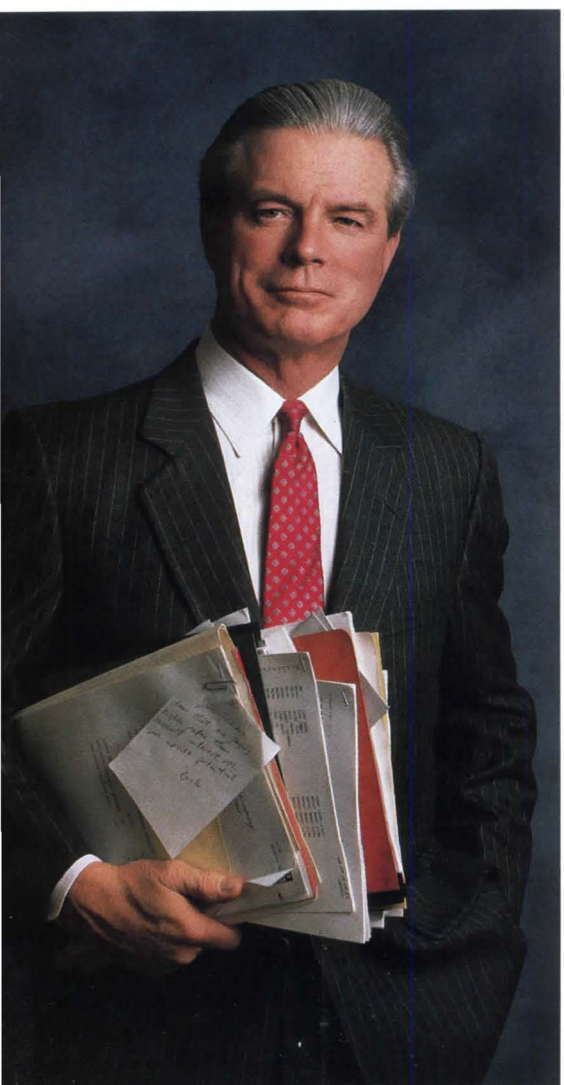
Given continued pressures on the federal budget and barbs about feathering the Congressional nest, this judgment may have been wise to the point of inevitability. Still, there are some (including this writer) who deny that an addition to the Capitol was wrong in principle, and find the AIA's fervor over the issue a somewhat odd stance that at times had more to do with lack of faith in contemporary architecture than with reverence for the past.

Whatever the case, there is certainly much to admire in the outcome. The restoration's technical aspects were intricate; the building's original Aquia Creek sandstone, quarried in Virginia, was chosen by George Washington in what one commentator characterized as a "poorly conceived economy move." For $6000 he got a material that probably started to crumble as soon as it got to the site. None of this was helped when the British set fire to the place in 1814.

Over the years, as many as 35 coats of paint were added to the West Front's nearly 100,000 square feet of surface area, complicating research and restorative work. There was no question that radical treatment was due: a large section of the sandstone facing collapsed in the midst of debates over what should be done. With a consolidating process employing Indiana limestone, the project team went through a series of careful tests and color-matching procedures to fill, strengthen, and stabilize the decaying original fabric.

With neighboring Pennsylvania Avenue looking as good as it has in decades, and nearby Union Station (see P/A, Feb. 1988, p. 24) slated for reopening this fall, one can say that this portion of official Washington—in appearance, at least—seems to have its act together.

Thomas Vonier ■



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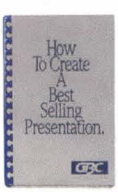
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P/A Calendar



Stairway from Lavish Interiors, New York Historial Society, through July 15.

Exhibitions

Through April 17
Frank Lloyd Wright: In the Realm of Ideas. Dallas Museum of Art and the LTV Center Pavilion, Dallas. Also **July 1–September 15** National Museum of American History, Smithsonian Institution, Washington, D.C. (See P/A, Mar. p. 37).

Through April 23
Open Architecture by Coop Himmelblau. Storefront for Architecture, New York.

Through May 15
Versailles: The View from Sweden, Drawings from the National Museum and the Royal Palace, Stockholm. Cooper-Hewitt, New York.

Through May 21
Otto Wagner: Drawings. Museum of Art and Archeology, Emory University, Atlanta. Also, **June 10–August 26** University Art Museum, University of Minnesota, Minneapolis (See p. 28).

Through May 27
Reweaving the Urban Fabric: International Approaches to Infill Housing. Paine Webber Art Gallery, New York.

Through June 26
The Art that is Life: The Arts and Crafts Movement in America 1875–1920. Cooper-Hewitt Museum, New York. (See P/A, May 1987, p. 32.)

Through June 30
Three Designs: The Norman Rockwell Museum Gallery, Old Corner House, Stockbridge, Mass. (See p. 25.)

Through July 4
A New Brooklyn Museum: The Master Plan Competition. Brooklyn Museum, Brooklyn, N.Y.

Through July 15
Artistic Houses: Lavish Interiors of Nineteenth-Century New York. New York Historical Society, New York.

Through August 31
Sheet Metal Craftsmanship: Progress in Building. National Building Museum, Washington, D.C.

April 23–June 19
Frank Lloyd Wright and the Johnson Wax Buildings: Creating a Corporate Cathedral. High Museum of Art, Atlanta. (See P/A, April 1986, p. 27.)

May 2–June 25
The Bauhaus: Masters and Students. Bauhaus-Archiv, Berlin, West Germany.

May 4–July 10
The Rise and Fall of New York: Building and Unbuilding in Manhattan. New York Historical Society, New York.

May 12–September 4
Architectural Art: Affirming the Design Relationship. American Craft Museum, New York.

Competitions

April 27
Submission deadline, From Table to Tablescape Design Competition. Contact Formica Corp., Wayne, N.J. 07470, or call Marybeth Shaw, Susan Grant Lewin Associates (212) 382-2660.

May 6
Entry deadline, IDEA88: Industrial Designers Society of America Ninth Annual Design Competition. Contact IDEA, 1142-E Walker Rd., Great Falls, Va. 22066 (703) 759-0100.

May 27
Submission deadline, Halo Lighting Twelfth Annual Design Competition. Contact Len Lirtzman, The Hanlen Organization, 401 N. Michigan Ave., Chicago, Ill. 60611 (312) 222-1060.

June 1
Submission deadline, Excellence on the Waterfront Design Competition. Contact Martha Evelyn, The Waterfront Center, 1536 44th St., N.W., Washington, D.C. 20007 (202) 337-0356.

June 15
Application deadline, 1989–90 Fulbright Scholar Awards for work in Australia, India and Latin America. Contact Council for International Exchange of Scholars, 11 Dupont Circle, N.W., Washington, D.C. 20036-1257 (202) 939-5403.

Conferences

April 30–May 4
American Planning Association National Conference, San Antonio, Texas. Contact Sheri L. Singer, APA, 1776 Massachusetts Ave., N.W., Washington, D.C. 20036 (202) 872-0611.

May 2–5
A/E/C/ Systems '88, McCormick Place North, Chicago. Contact Sharon Price, A/E/C/ Systems '88, P.O. Box 11318, Newington, Conn. 06111 (203) 666-6097.

May 11–15
Environmental Design Research Association 1988 Conference, Pomona, Calif. Contact Steven Wright and Walter Arenstein, Program in Social Ecology, University of California Irvine, Irvine, Calif. 92717 (714) 856-7442 or (714) 856-7697.

May 15–18
AIANYC '88: American Institute of Architects National Convention, New York. Contact: AIA, 1735 New York Ave., N.W., Washington, D.C. 20006 (202) 626-0000.

May 15–18
International Facilities Exposition, International Design Center New York, Long Island City, N.Y. Contact IDCNY, 20-30 Thompson Ave., Long Island City, N.Y. 11101 (212) 593-3450.

May 15–19
Interior Design International '88, Earls Court, London. Contact Christine Sharp, AGB Exhibitions Ltd., Audit House, Field End Rd., Eastcote, Ruislip, Middlesex, HA4 9LT, England.

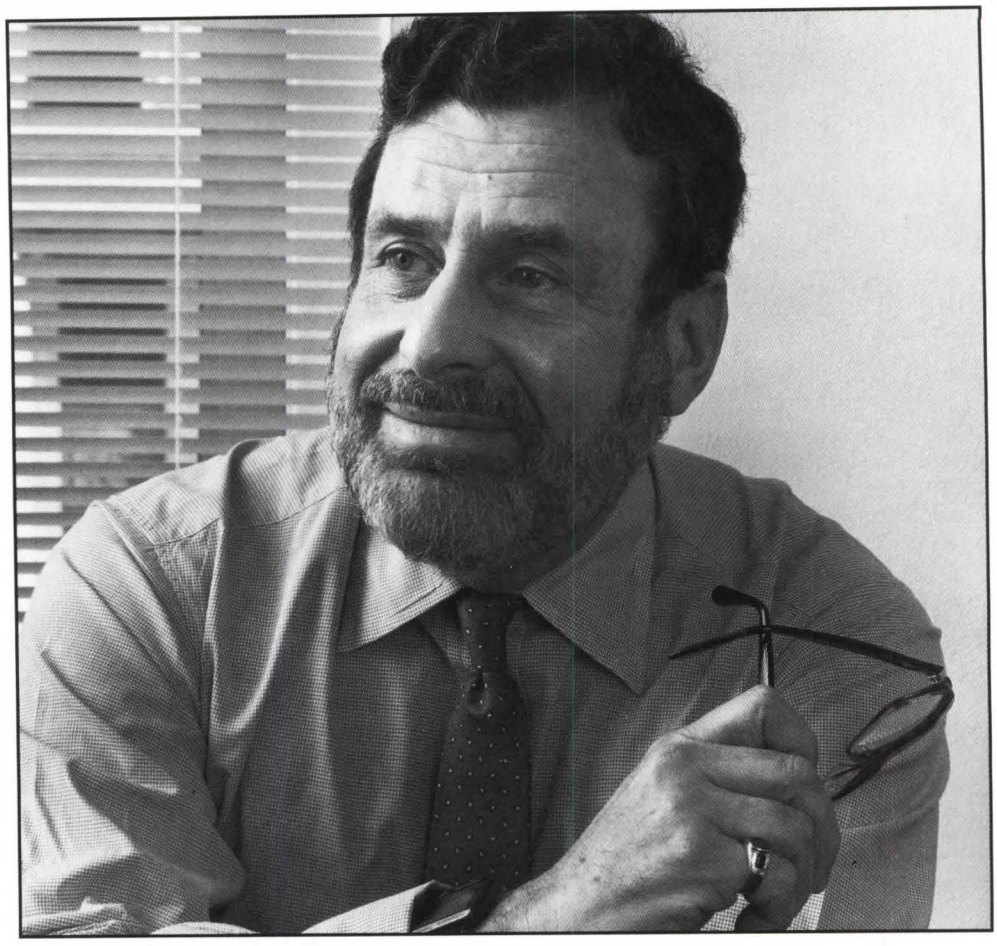
June 12–17
The Cutting Edge: 1988 International Design Conference, Aspen, Co. Contact IDCA, P.O. Box 664, Aspen, Co. 81612 (303) 925-2257.

June 14–17
NEOCON 20, Merchandise Mart, Chicago. Contact NEOCON 20, 470 The Merchandise Mart, Chicago, Ill. 60654 (312) 527-4141.

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I feel very good about them."



Martin David Dubin

Dave Dubin is a principal in Dubin, Dubin and Moutoussamy, a 75-year-old architectural firm based in Chicago. He is past president of both the Chicago and Illinois AIA. We value our relationship with his firm and thank him for his willingness to talk to you about us.

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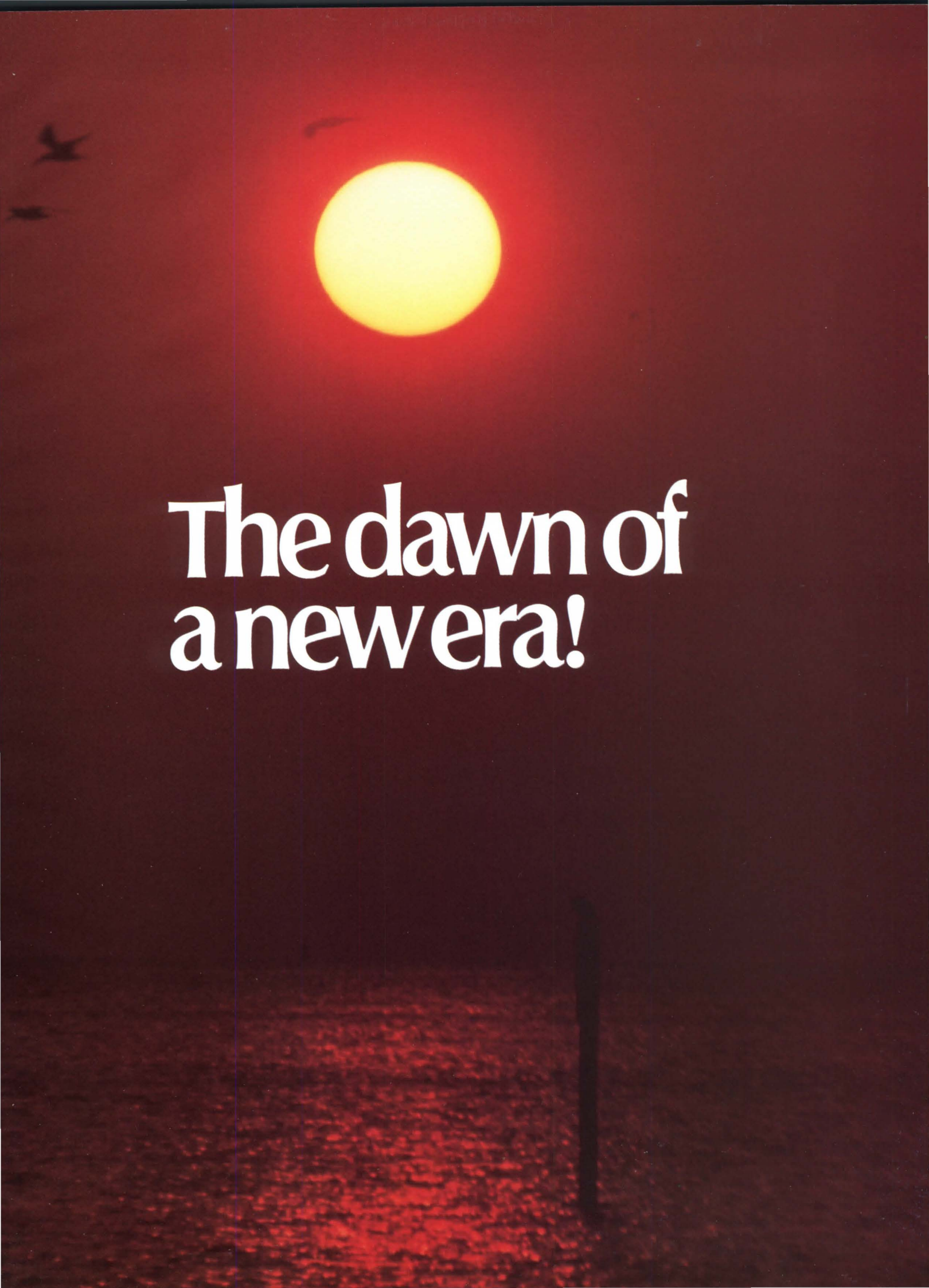
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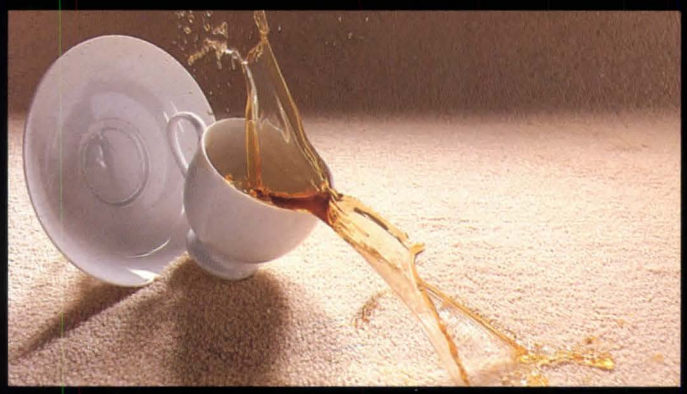
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3. If the original purchaser believes they have a fading problem, they must allow a certified carpet inspector (contacted by Amoco within 10 days) to inspect the affected area. If the certified inspector determines noticeable fading has not occurred, the original purchaser will be responsible for the cost of the inspection.

4. If the stain is not removed by the professional cleaner so that a noticeable color change greater than one unit on the AATCC Gray Scale exists, or a fading problem is verified by the inspector, Amoco Fabrics and Fibers Company will repair or replace the affected portion of the carpet with new carpet of equivalent quality at no cost to the original purchaser, including installation cost.

5. The original purchaser should provide the date and place of purchase of the carpet to Amoco in the call to the Service Line and must present proof of purchase to the inspector or cleaning professional.

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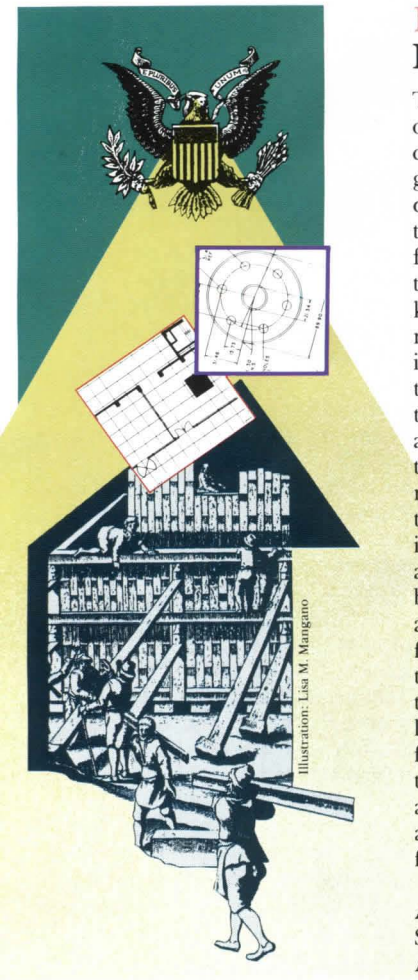
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P/A Practice

Marketing: Frank Battistello discusses the course to take in marketing to the Federal government.
Law: Norman Coplan describes the changing interpretations of the privity principle among the courts.


Illustration: Lisa M. Mangano

Marketing: Getting Federal Work

The Federal government is not only the country's largest single client for architectural and engineering services, it is the most diverse. Its needs range from the design of simple storage facilities to that of the most up-to-date laboratories. When marketing to the Federal government, it is important that a firm identify specific skills and expertise, match those strengths with the appropriate Federal agency, and concentrate its efforts within that range. Many firms make the mistake of venturing outside of their expertise in hopes of breaking into a new market, but in the area of Federal work, this only brings frustration, loss of time, and misdirected resources. Many firms also don't take the time to truly understand the extent of the client's needs. When establishing a marketing strategy, the firm should ask: Who is the potential client, what are his needs and concerns, what is the client asking for, and how should the firm address those issues?

Acquisition Regulations
Sections 36.1–36.7 of the Federal Acquisition Regulations (FAR) provide the ground rules for the selection of architectural and engineering services. The government is allowed to solicit for design services in one of the following ways: 1. Sole Source (which is most difficult and one that a firm should not count on); 2. Small Disadvantaged Business 8(a) Set-Aside Program (limited to certified 8(a) firms); 3. Small Business Set-Aside Program (open to all small businesses, including those in the 8(a) program); and 4. Full and Open Competition (which allows all types of firms to apply). Advertisements in the *Commerce Business Daily* will indicate which avenue is being used. It is crucial that a firm be familiar with those categories in which it is allowed to compete.

The Federal government applies a system of checks and

(continued on page 66)

Law: The Privity Principle

The right of a contractor to seek damages against an architect for economic loss because of inadequate or defective plans depends upon the jurisdiction that governs the legal action. The traditional defense in this type of action is that the architect, having no contractual relationship with the contractor, owes him no duty to exercise due care in the preparation of plans and specifications. A majority of jurisdictions, however, have ruled that even if a contractual relationship does not exist, an architect owes a contractor the duty of exercising due care in preparing plans and specs.

There are still jurisdictions that hold to the rule that in the absence of "privity" (a contractual relationship), an architect is immune from a direct suit by a contractor who seeks to recover for economic loss stemming from negligent performance by the architect. Yet, even in those jurisdictions, the immunity of the architect from a contractor's suit is under attack, and decisions on this subject are sometimes in conflict.

Reflecting that conflict was a series of Federal and State Court decisions handed down during 1987. In March of 1987, a Federal District Court considered a case (*Morse/Diesel Inc.* v. *Trinity Industries, Inc.*), involving the laws of New York, in which a subcontracting firm had sued an architect for economic loss, alleging that it had submitted a bid for construction based upon drawings and specifications that were inaccurate, insufficient, and incomplete. The defendant argued that under the laws of New York and in the absence of a contractual relationship, a subcontractor could not seek damages from an architect arising from the architect's malpractice. The Court, however, ruled that the architect was subject to liability even in the absence of a contractual relationship because the architect should have foreseen

(continued on page 70)

Practice Points

***Sick building syndrome,* says the *Wall Street Journal,* is being cited in a number of lawsuits by office workers who claim their health was damaged by indoor air pollution. A recent $622,500 out-of-court settlement is the largest victory to date; no plaintiff has yet won in court.**

***The market for prison construction* is good, according to the Kiplinger Washington Letter, which says that 40 states will spend close to $3 billion this year to add 60,000 new cells to overcrowded facilities.**

***CADD systems* continue to become the norm in architectural firms. The Guidelines Letter cites surveys claiming half of all firms will have CADD by the end of the year, and that "full-fledged CADD software" will be available for a few hundred dollars.**

***Industrial projects* are the "best hope" for developers in 1988, according to *Business Week.* New construction of industrial facilities is expected to climb 4 percent this year, while office, retail, and residential work declines.**

***The Architects and Engineers Insurance Company* (P/A, Jan. 1988, p. 28), a risk retention group made up of design firms, is now issuing liability insurance policies. Now based in Northbrook, Illinois, the company plans to move to Dover, Delaware.**

***Budgeting the typical new home* has changed in the last 40 years. Labor and materials accounted for 69 percent of the cost of a typical new home in 1949, 47 percent in 1986, says the NAHB's Housing Backgrounder. The cost of land took a larger share of the pie in 1986, up to 25 percent from 11 percent. The total sale price in 1949: $9500. In 1986: $92,000.**

Marketing *(contd. from page 65)*
balances to the selection of firms. Regulations require that the evaluation board include qualified government architects or engineers, all of whom have voting privileges, and a contracting officer as a nonvoting member. The contracting officer acts as the agency's watchdog, mainly to ensure that the regulations have been followed, that all firms are equally evaluated, and that the evaluation factors are those advertised. Once a project has been advertised in the *Commerce Business Daily,* the contracting officer also is the only person allowed to answer questions. If there are ambiguities or misstatements, it is the responsibility of the contracting officer to evaluate and ultimately respond to them.

Who will actually sit and chair such evaluation boards varies among federal agencies. For instance, some agencies use only upper management with a branch chief as chairperson, while others use rank-and-file engineers and architects with a section chief as the chairperson. In some of the research-oriented agencies, a person with a scientific background may sit on the board.

Commerce Business Daily
By regulation, the Federal government must solicit for design services though the *Commerce Business Daily* (CBD). This announcement is, by far, the single most valuable bit of information that a firm will have during the solicitation phase, and it can aid in the preparation of presentations.

Once a project is announced, no specific questions can be answered that relate directly or indirectly to its requirements. Also, the information in the announcement is generally insufficient, by itself, to prepare a response properly. That is why it is extremely important that a firm gather marketing information prior to the announcement.

Find out who is responsible in the agency for the development and monitoring of the design and construction program and set up an introductory meeting. A senior member of the firm and a project manager should attend. The senior member can represent the firm, and the project manager can address its technical capabilities as well as absorb information that relates directly to the technical requirements of the agency. At the meeting, become familiar with the types of facilities used by the agency, its special requirements or concerns, and any problems that are a continuing headache. Once problems have been identified, discuss the firm's relevant qualifications. After the meeting, request a walk through the agency's facilities. This will reveal many things that never come up during meetings or interviews, such as how the occupants use the facilities in ways other than those intended.

The evaluation board, in conjunction with the contracting officer, usually develops the announcement in the CBD. The board evaluates the generic needs of a project and the needs of the users, and translates that into key issues that become the sole criteria by which all firms are evaluated; at no time can the criteria change unless a new solicitation or announcement is issued.

The announcement in the CBD also will state the date, time, and place that proposals are to be turned over to the government for consideration. Firms should ensure that their submissions are delivered on time and to the right place. Excuses, such as unforeseen delays or mistaken delivery locations, are not accepted.



JACK

Standard Form 254
This form, and its complement Standard Form 255, are not questionnaires. They constitute a written presentation to the government. Standard Form 254 addresses the general background of the firm. The mistake that most firms make is to take that literally, when, in fact, they should address their experience with related projects. If an agency is advertising for design services for a laboratory, it is not concerned with the office buildings, churches, or warehouses that a firm has designed. The board is interested in related project experience, such as a hospital or pharmaceutical facility. It is in a firm's best interest to develop a 254 form that relates to the issues advertised.

The evaluation of the form is based on a point system directly related to the factors stated in the CBD. Criteria must be listed in order of importance; in some instances, percentage weights will also be provided, giving firms a more detailed definition of how the board will be scoring. The technical capabilities and not the size of the firm are the issue.

Standard Form 254 consists of three pages, addressing 12 areas. Sections 1, 2, 3, 5, 5a, 6, 7, and 7a are self-explanatory, dealing with purely administrative issues. Section 4 (type of ownership) is extremely important because it may directly relate to the type of firm that the announcement has been set aside for. If the CBD identifies that only firms in the 8(a) program may apply, then only those firms in the program will be eligible. If the wrong box on the form is marked, a firm will not be considered further.

Section 8 (Personnel by Discipline) addresses the size and technical resources of a firm. If a firm has only one mechanical engineer and the CBD indicates that a project has a significant mechanical component, the firm will be hard pressed (through this presentation) to convince the board that it has sufficient personnel available to perform the work. Many firms identify some of their members as having more than one area of expertise. The form, however, asks that a firm list each person only once, and chances are that the board will credit a firm with only one discipline for each person.

Section 9 (Summary of Professional Services Fees Received) on the surface seems quite unimportant, but it is not. The fee structure of a firm over the last five years gives the board a quick history of its concentration. It can tell, for example, the amount of experience a firm has had with government work, with its administrative load. The board also compares the actual fees reported in Section 9 against the total personnel identified in Section 8. A quick calculation indicates if the available staff has been properly identified. If a firm claims 25 employees, but has had fees that support only 20, this alerts the board that five people may be part-time and not always available to work on the project. That is why it is important to state accurately the firm's status and the





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staff's capability.

Section 10 (Profile of Firm's Project Experience) relates to profile code numbers 001 to 117 on page three of the form. The board looks at this section to determine a firm's overall capabilities plus those directly related to the advertised project. For instance, if biomedical laboratories are advertised in the CBD, then profile codes 013 (Chemical Processing & Storage), 016 (Cold Storage; Refrigeration; Fast Freeze), 043 (HVAC), 044 (Health Systems Planning), 048 (Hospital & Medical Facilities), 058 (Laboratories; Medical Research Facilities), 080 (Plumbing & Pipe Design), 089 (Rehabilitation [buildings, structures, facilities]) if it is a rehab project, and 100 (Special Environments, Clean Rooms, etc.) would be relevant.

Section 11 (Project Examples) lets the firm show its overall experience with projects not specifically related to the one advertised. If a firm is submitting as the prime contractor, the board will want to see if the firm has served in a similar capacity in other projects. The board also will look at the cost of previous work compared to that of the advertised project. If most of a firm's experience is with $1 million projects and the one advertised is estimated at $80 million, the board might have some reservations about the firm's ability to handle the work. The board, too, looks at the estimated completion date listed on the form when considering the firm's current workload versus its ability to handle additional work, keeping in mind the staff identified in Section 8.

Section 12 (Verification of Fact) is the signature block that verifies the accuracy of the information presented. If this is not signed or is not an original signature, some contracting officers may not accept the proposal.

Standard Form 255

This form is more project specific and more directly related to the criteria listed in the CBD. It consists of 10 primary sections, with Section 7 (Key Persons) being the most critical. Sections 1, 2a, 2b, 3, 3a, and 3b are purely administrative in nature.

Section 4 (Personnel by Discipline) is the same as Section 8 on the 254 form; both should agree. Some firms combine the personnel of the associated firms and consultants to show their potential strength, but it is best if separate 254 and 255 forms are presented for each firm. The board likes to evaluate each segment of the proposal independently and then as a unified team.

Section 5 (Joint-Venture) allows the board to understand the working relationship of a joint-venture team. Section 5a addresses its previous work. The board may feel uncomfortable if this is the venture's first effort, viewing it as a marriage without a courtship. Generally, though, joint-ventures are not penalized or discouraged.

Section 6 (Key Consultants), besides offering a consolidated list of proposed consultants, lets the board quickly determine if all disciplines required for the project are covered, and identify previous working relationships of the design team. If a prime has not worked previously with a proposed consultant, that could create some

(continued on page 68)





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Marketing *(contd. from page 67)*
concern, especially if it is a major consultant. In general, it is best not to use new consultants unless they are well known to the agency.

Section 7 (Resumes of Key Persons Proposed for the Advertisement) is where the firm's talents can shine. It is important to offer a well-balanced team, not only one that has worked well together, but one in which employees' technical knowledge and experience complement each other. Subsections 7a–7f identify the educational background and years of experience of the team members. Subsection 7g (Experience and Qualifications Relevant to the Proposed Project) is the heart of the presentation. Many firms use this section to reiterate information already provided in 7a–7f, but that is not its purpose. This section asks for the firm's previous experience with projects related to the one advertised. A brief discussion of the responsibility and technical effort of the firm and the size of projects should be provided. It is important that this section be brief and to the point.

Section 8 (List of Work Best Illustrating Current Related Projects) should list projects that are similar, if not equal to the project advertised. Remember, ten projects are requested, not 20 or 30; pick those that relate best in technical difficulty and magnitude.

Section 9 (Current Work Performed Directly for Federal Agencies) gives the board an idea of the firm's commitment to and dependency on the Federal government for work. Some agencies will not allow more than one award at a time to a firm, and this section helps single out those that are currently under contract.

Section 10 (Additional Qualifications Related to the Proposed Project) is one of the most abused sections of both forms. Many firms use this space to reiterate areas already covered, which is a waste of time and resources. This section should be used only for relevant information not given earlier.

In sum, Standard Forms 254 and 255 are key to a firm's being short-listed. They are not generic to all projects and will bring more positive results when prepared separately for each project.

Being Short-Listed
After board members rank each firm, the chairperson collects and evaluates all of the scores. Both voting and nonvoting members of the board then convene and reach a consensus about the short-listed firms. Regulation requires that a minimum of three firms be selected in accordance with "The Brooks Act" (Public Law 92-582) which only allows for technical evaluation and not a cost evaluation. Any one of the short-listed firms must be considered capable of doing the work. The firm that the board ultimately selects will have the best understanding of the program and the best management plan to orchestrate the design effort.

Each short-listed firm is asked to make a presentation to the board. Generally, presentations are about three-quarters to one-and-one-half hours long, followed by a short question-and-answer session. Each firm is usually given a copy of the design criteria or requirements of the program, around which the presentation should be developed.

The firms that use the criteria as an outline and follow it will ultimately be more successful. "Dog and pony" slide shows should be avoided. By this time, the board is aware of each firm's capabilities; what it wants to know is how a firm understands the program, how it will approach the problem, and who will develop the design.

It is quite appropriate to have a principal of the firm deliver the general introductions. However, the proposed project manager should be the main presenter, introducing and explaining the management plan, since that individual will be the person responsible for orchestrating the project. It is important that the board feel comfortable with the project manager and his understanding of the program. Concerned with the approach of key designers, the board also should have an opportunity to question and evaluate other members of the design team.

Management Plan
What constitutes a good management plan? First, it must explain how the firm will be set up for
(continued on page 70)

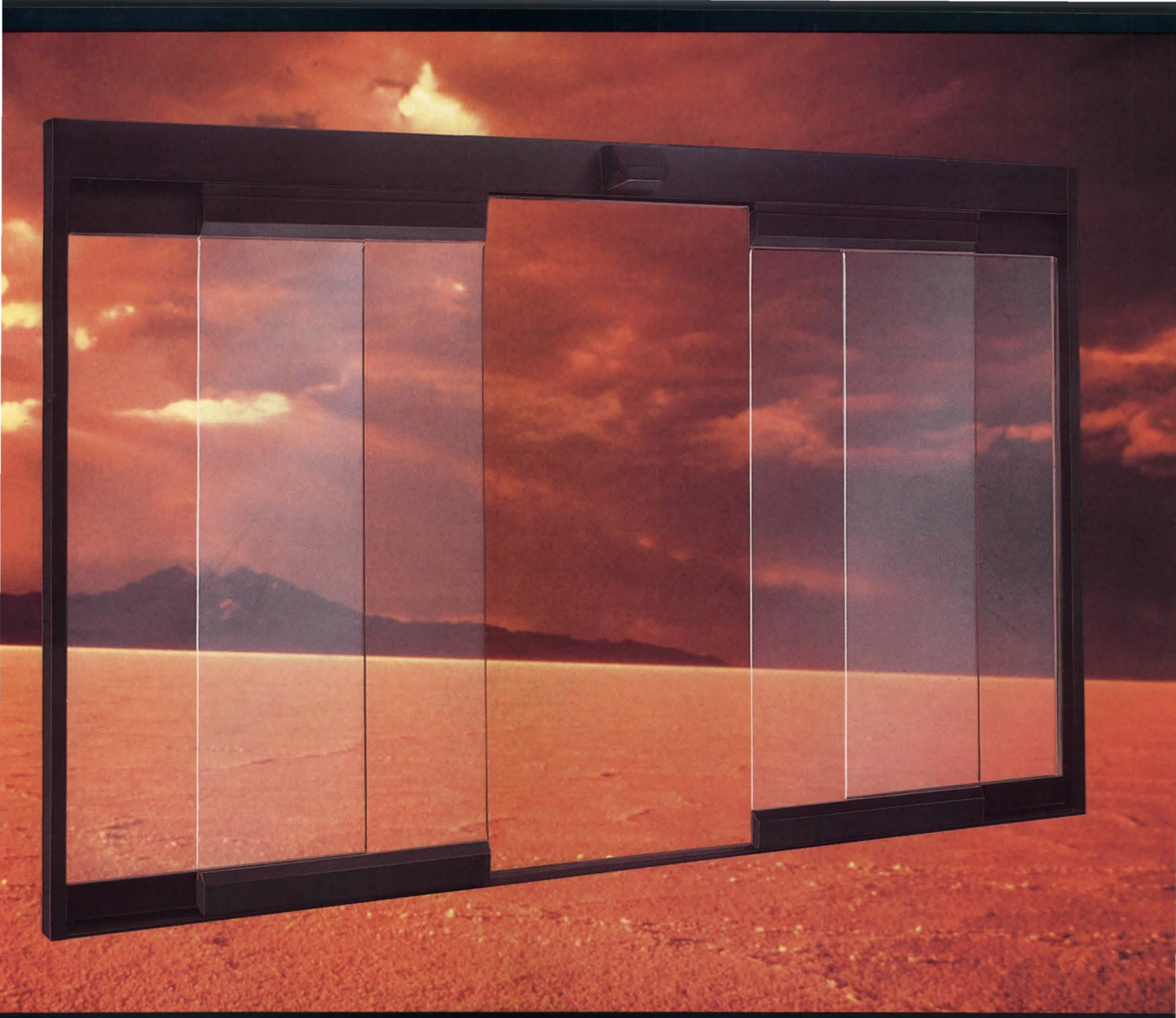


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Marketing *(contd. from page 68)*
the project: who will take charge, how will the project teams be set up, how will they coordinate design development, and what is each individual's area of responsibility. Second, the plan should include a well-developed schedule in which all of the milestones in the project have been identified and charted out. Third, the plan should address cost control. When dealing with the Federal government, especially in today's budget-sensitive times, cost control is as important as good design. Fourth, and finally, the management plan should show how the firm will assist with post-design services. Overall, the plan should relate to the evaluation factors identified in the project's announcement and any associated factors arrived at during the firm's introductory meetings.

If the board starts to interrupt and ask questions or gives questioning looks, the firm is probably not doing well during the presentation. The firm should take the lead from the questions asked, take note of the board's concerns, and be better prepared next time.

Negotiations
Once a firm has been selected, negotiations begin. The government has always sought fees that are fair and reasonable. Until the early 1980s, and in some agencies even today, splitting the difference in proposed fees has been common practice. Most agencies now, however, have become more sophisticated in determining a fair and reasonable fee, and are prepared to discuss the man-hours required for each stage of a design's development.

Percentage charts, which relate to construction costs and not to man-hours, can offer a ballpark figure for fees, but don't take them to the negotiation table. Also don't use those figures as the bottom line to back into the government's cost analysis sheets. Once negotiations begin, the ploy will become obvious and give the government the upper hand. Finally, overhead has now become a negotiable item, so a firm should understand its overhead needs. The government will not pay for lavish expenses, but it will pay for its fair share of reasonable costs.

Marketing to the Federal government is more difficult than to private clients, demanding that certain things be kept in mind: the importance of introductory meetings, the significance of Standard Forms 254 and 255, the value of the design team making the presentation, and the central role of the management plan.

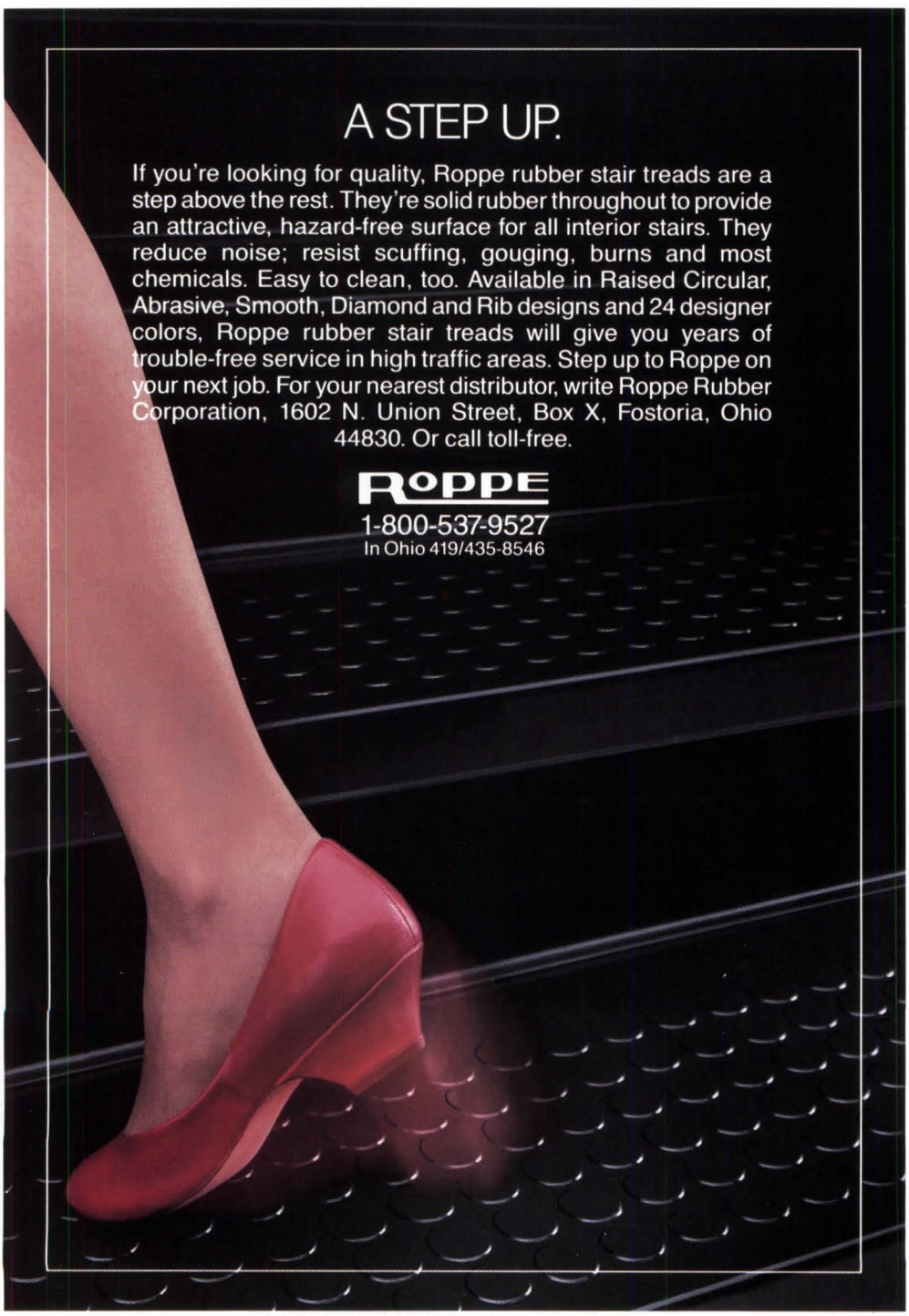
Not every commission is for every firm, so it is important that firms be selective and concentrate on those projects that complement their expertise. Large firms that have a marketing staff may appear to have an edge over small firms, but that is not necessarily the case. If a firm is selective and understands how to market to the Federal government, its efforts will not go unrewarded. ***Frank Battistello*** ■

The author is Assistant Chief of the Design and Construction Branch of the Division of Engineering Services at the National Institutes of Health.

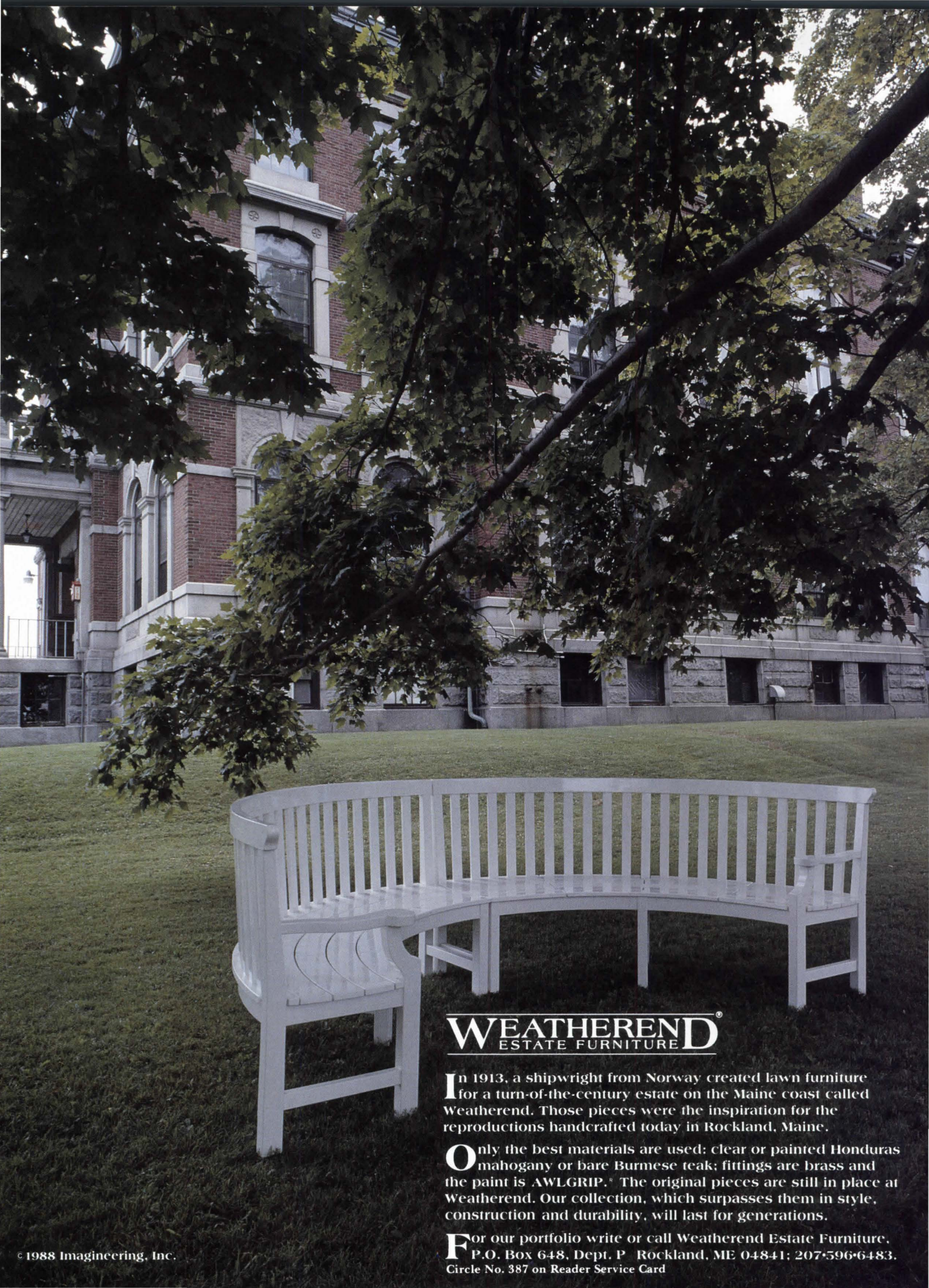
Law *(continued from page 65)*
that if he did not exercise due care, the subcontractor might sustain damages. The rationale of the Court was that, in such circumstances, a person has a duty to use ordinary care and skill to avoid causing danger or injury to people or property.

In April 1987, a New York State Appellate Court considered an appeal after a Trial Court refused to dismiss an action instituted by a contractor against an engineer who had prepared contract documents for the construction of a sanitary sewer system (*Northrup Contracting Inc.* v. *MRB Group, PC*). The contractor contended that during construction, unanticipated excess water was encountered, forcing the contractor to incur additional costs for material and labor. The contractor alleged that the bid documents were erroneously and negligently prepared and sought to recover damages from the engineer. The Appellate Court merely affirmed the refusal of the Trial Court to dismiss the contractor's action on the ground of lack of privity between engineer and contractor.

Later that same month, however, the U.S. Circuit Court of Appeals, in interpreting the law of New York, reached an opposite conclusion (*Widett* v. *U.S. Fidelity and Guarantee Co.*). In this case, a subcontractor instituted a
(continued on page 72)



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Law *(continued from page 70)*
negligence action against an architectural firm that prepared plans and specifications for a project. It was contended that the elevations appearing on the firm's site plans were in error, causing the subcontractor to incur extra expenses. The defendant argued that, in New York, the architect did not owe the subcontractor any duty of care in performing his services if there was no contract between the two. The plaintiff countered with the argument that the highest Court in New York had permitted a suit against accountants for the negligent preparation of financial statements by a party with whom the accountants had no contractual relationship and that this rule should be extended to suits against architects.

The Circuit Court, however, stated that in the decisions of the Courts of New York, either prior to or subsequent to the relaxation of the privity rule in claims against accountants, there had been no indication that the privity requirement should be relaxed in actions against architects. The Court concluded that "because privity of contract remains a requirement to establish negligence against an architect under New York Law and because such privity is lacking, the plaintiff fails to state a claim for which relief could be granted."

In June 1987, as a result of the above decision, the Federal District Court in *Morse/Diesel Inc.* v. *Trinity Industries, Inc.*, reversed its decision, now ruling that privity was required to hold professional architects or engineers directly liable to contractors. We are not ready, stated the Court, to extend a modified form of privity that would support the direct right of contractors to sue architects for economic loss arising from the failure of architects to exercise due care.

A review of these decisions suggests an ambivalence as to the appropriate rule to be applied to claims against architects by persons other than the owner with whom they have contracted. The nexus between architect and subcontractor may be insufficient to justify a relaxation of the privity principle. But courts may well conclude that the relationship between the architect and general contractor is sufficiently close to justify enforcing a duty of care between them and disregarding the privity requisite as a condition for suit. In any event, the trend of judicial decisions, which has expanded the potential liability of design professionals, suggests that even in those jurisdictions that now adhere to the privity principle, the future will see that principle substantially weakened if not eventually discarded.

Norman Coplan ■

The author is a partner in the New York law firm of Bernstein, Weiss, Coplan, Weinstein & Lake.



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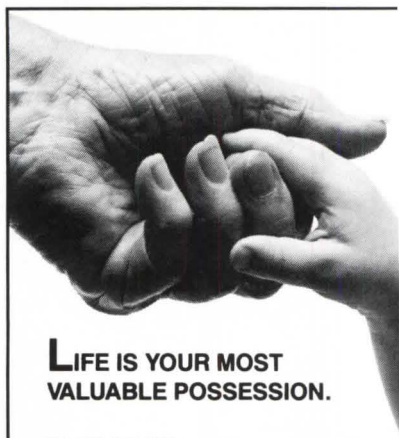
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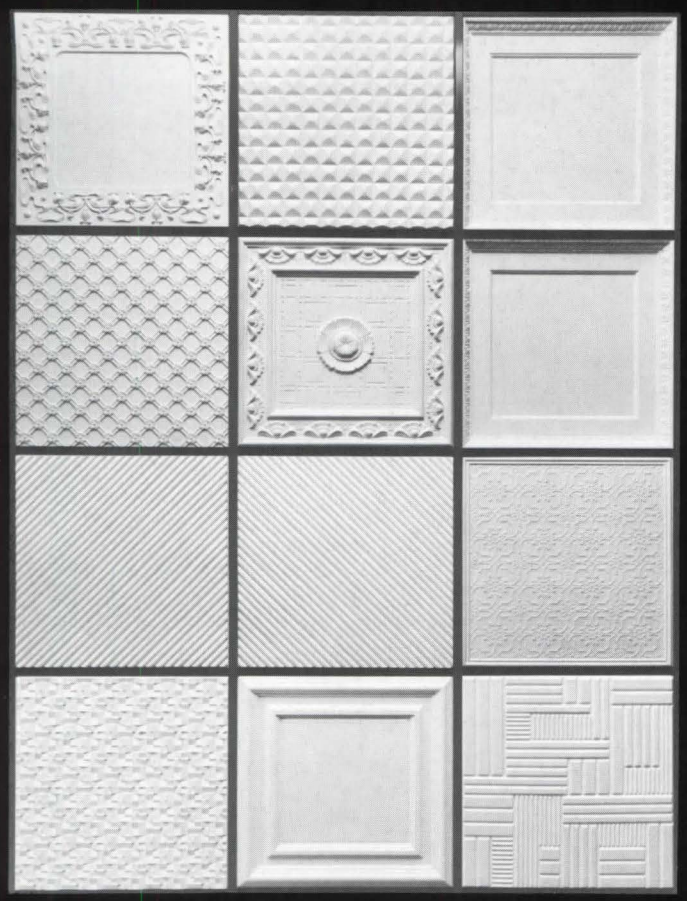
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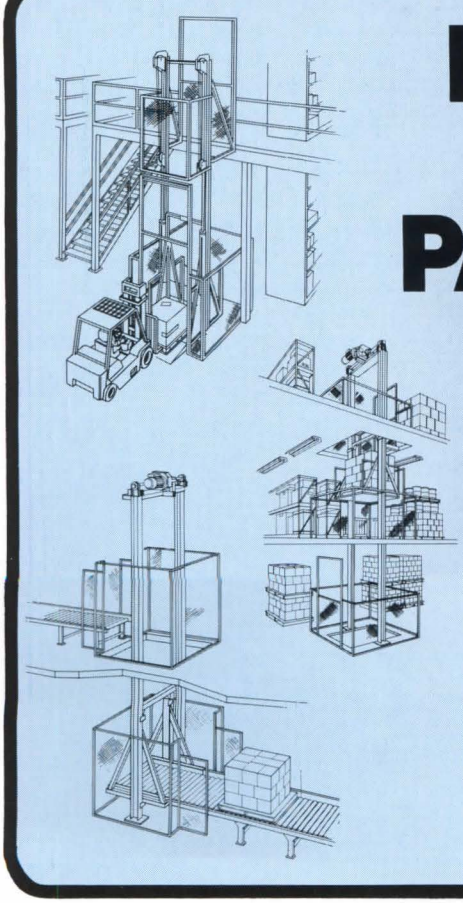
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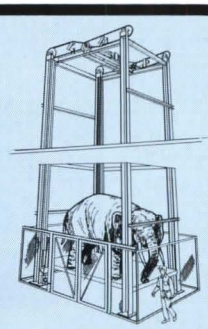
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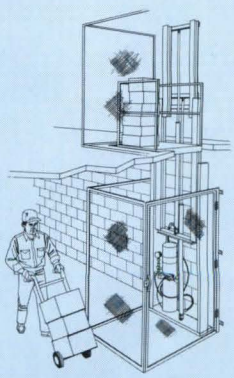
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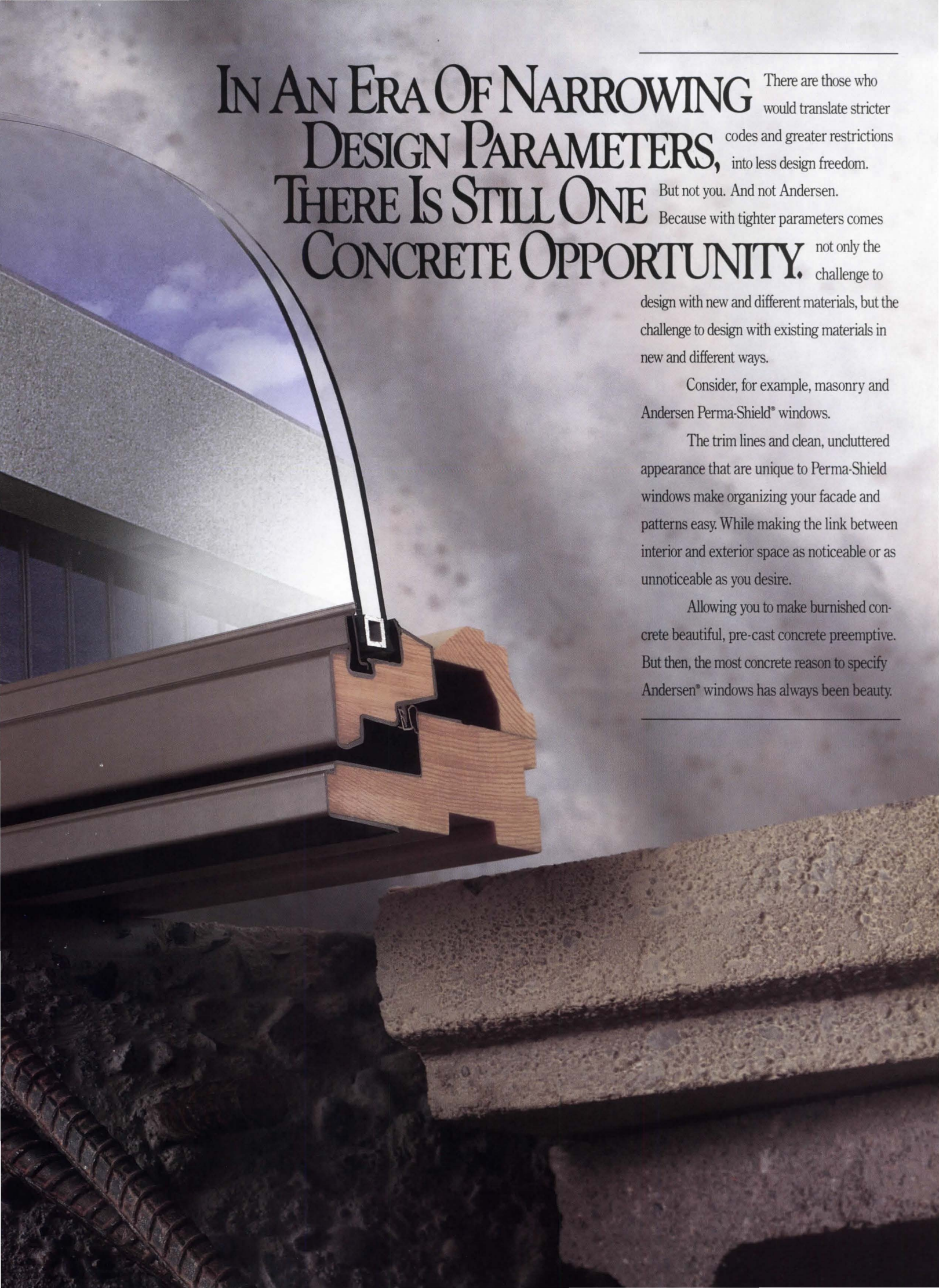
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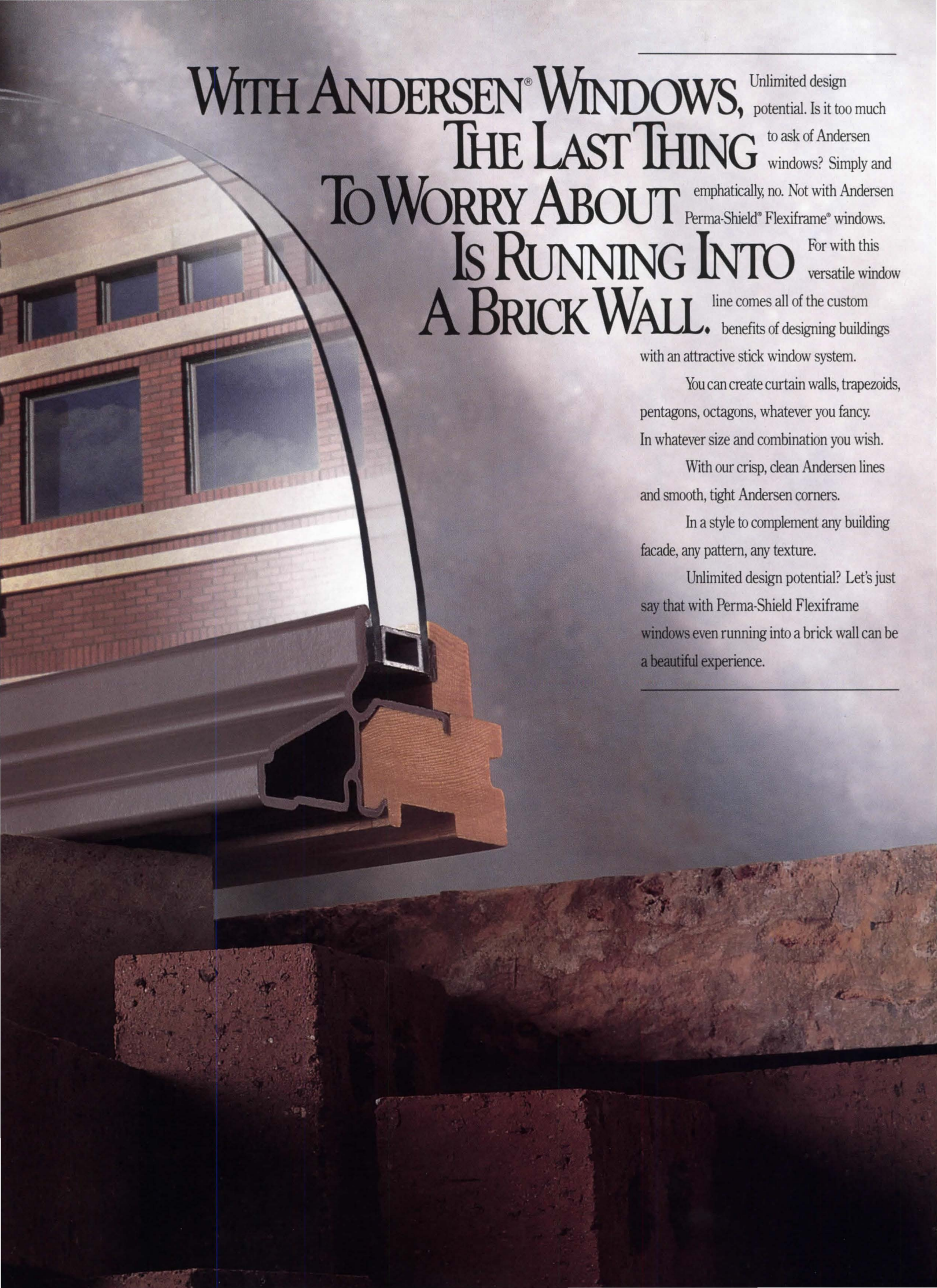
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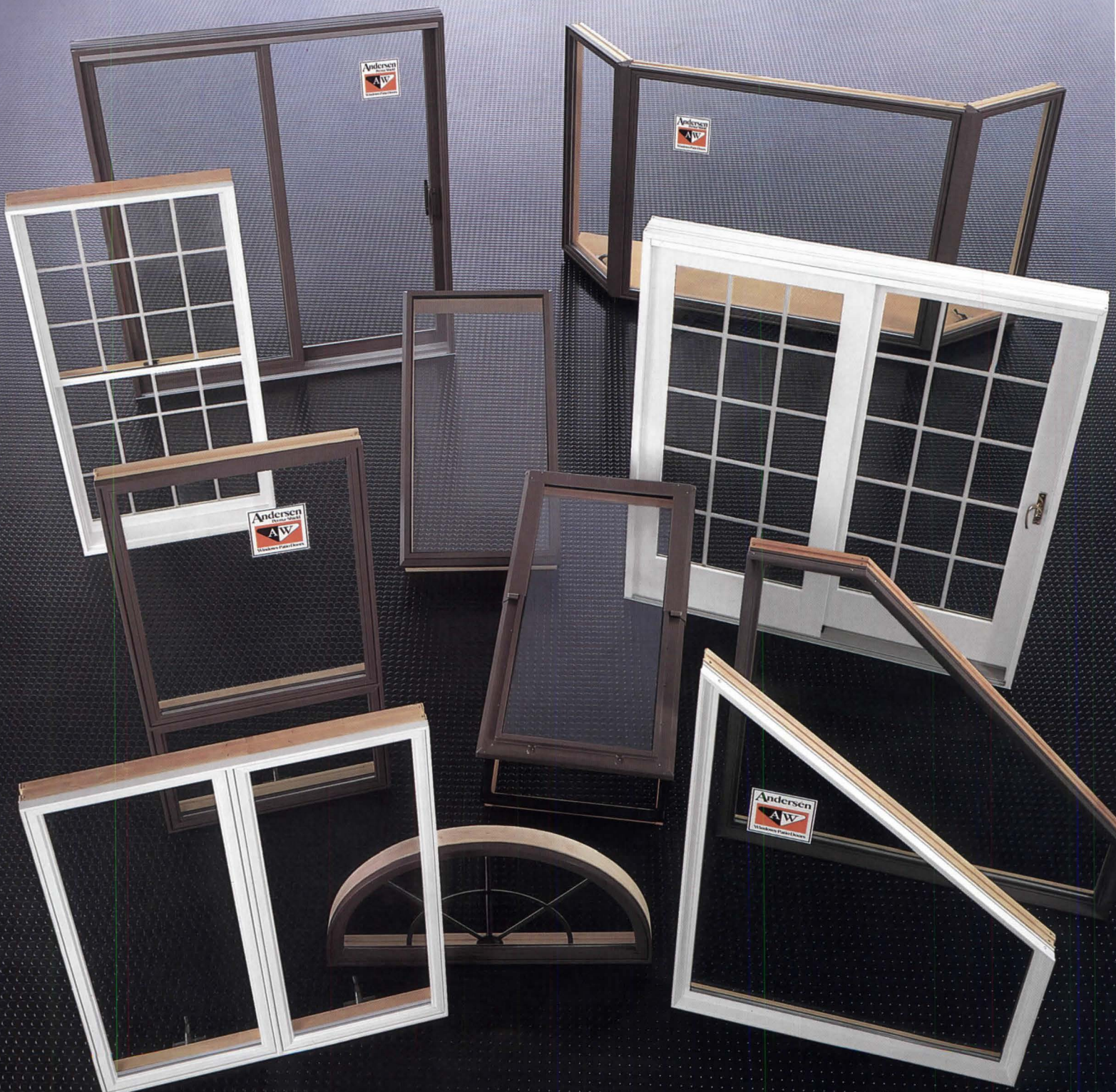
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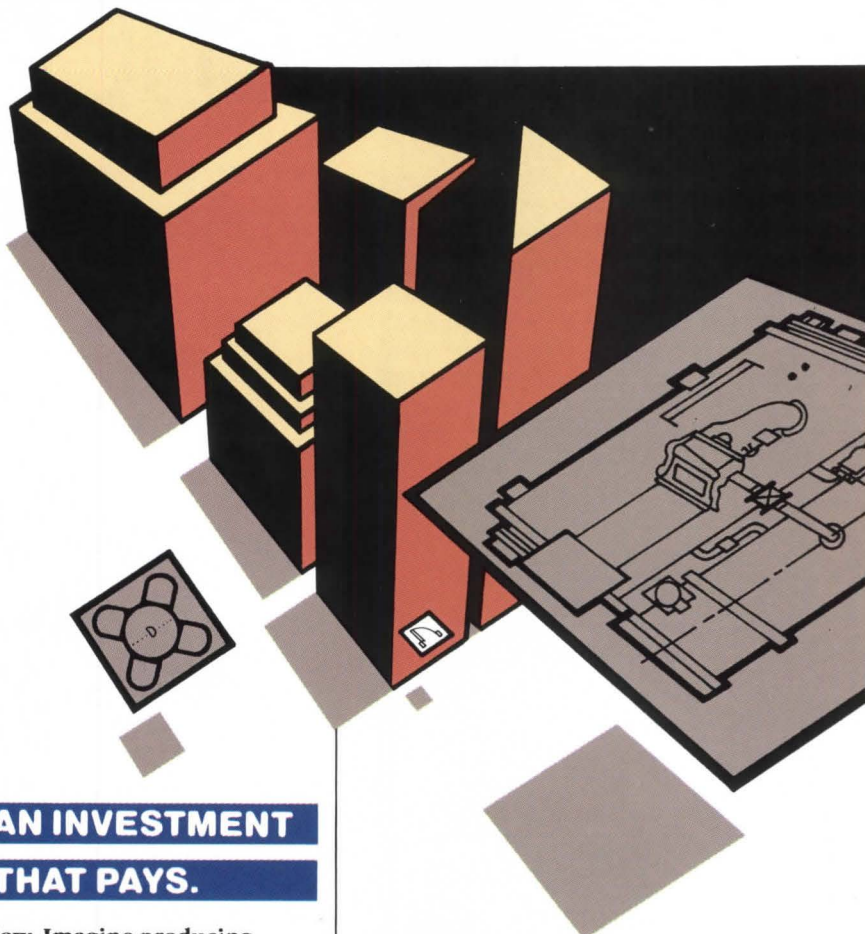
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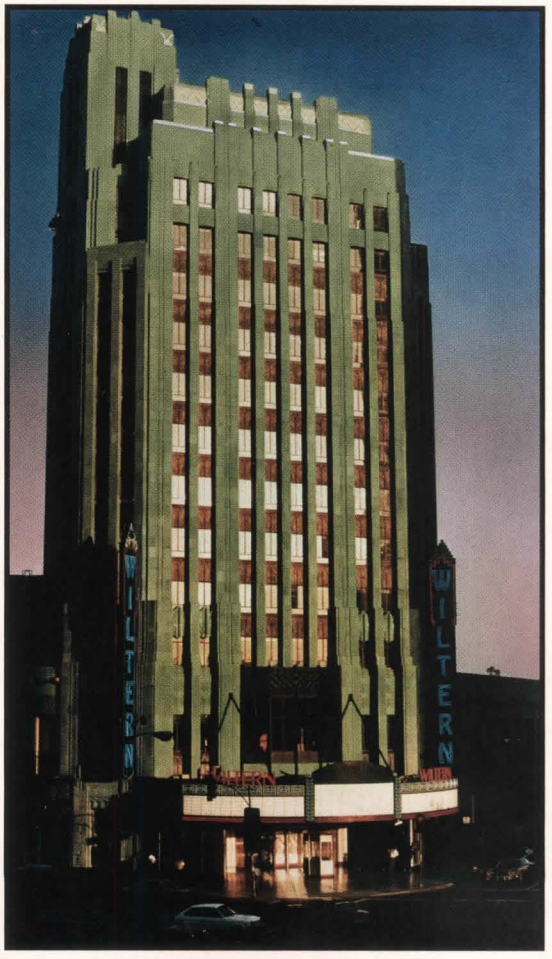
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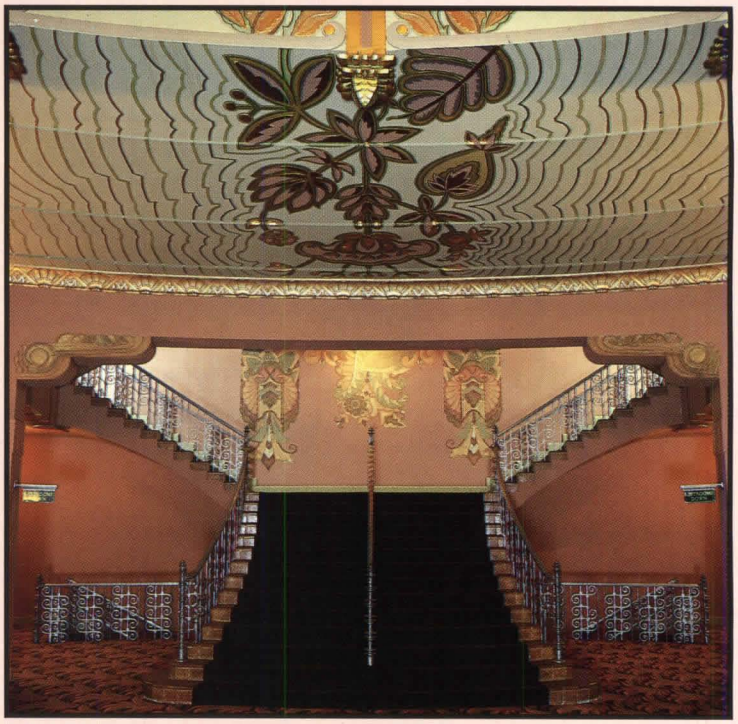
Wilshire Rebirth

Surviving the all-too-common saga of demolition threats and reprieves, a Los Angeles landmark is finally returned to most of its original glory with a theater restoration by Levin Associates and new office interiors by and for several other design firms.

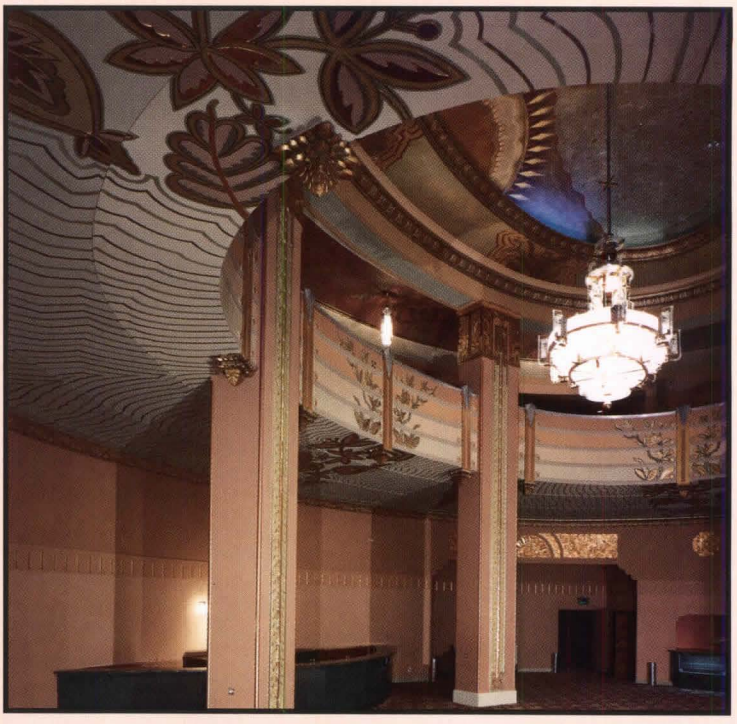


Randall Michelson

Sophisticated massing, recessed vertical window slots, stepped roofline, and a small secondary tower give the Pellissier Building an impression of greater than actual height. The entrance to the Wiltern Theater is at the corner.



Michael Garland



Randall Michelson

Elegant circulation spaces like the grand staircases (top) and the main lobby (above, and facing page) show the vibrant color and pattern characteristic of Art Deco interiors. The oval ceiling of the lobby features its renewed original chandelier and a restored mural depicting the sun and planets. The lobby decoration establishes a tropical theme, which continues throughout the public spaces.

THE story has all the elements of a classic Hollywood cliffhanger where the beloved heroine is saved from a fate-worse-than-death by a hero who miraculously arrives at the end of the last reel. The heroine, in this case, is the Pellissier Building, and the hero, developer Wayne Ratkovich, aided by a large supporting cast.

The Pellissier Building is one of the great Los Angeles Art Deco buildings. Built by Henry de Roulet, a property developer with great faith in the future of the city, the structure was begun in 1929, at the onset of the Great Depression. A lavish and colorful complex, it is, along with Bullocks department store, one of the most important historic landmarks along the Wilshire corridor.

Built on a corner said to have been the busiest in Los Angeles, the 12-story tower building designed by Stiles Clements of Morgan, Walls & Clements was meant for mixed use. It originally housed a 2433-seat theater at its base, 12 stories of offices and two 2-story retail wings stretching a full city block along Wilshire Boulevard and extending south along both Western Avenue and Oxford Street.

The design was typical of its era. An innovative meld of art and architecture, it responded visually and symbolically to both its location and its functions. Its 12-story tower is sited diagonally to Wilshire and Western and is punctuated by a 14-story elevator tower facing northeast as if to herald the city's westward march. The entrance to the offices is on Wilshire at the base of the small tower. The theater marquee and entrance are also diagonal to the corner, and above the marquee, a two-story bay window signified the developer's office suite, visually extending the building's base above the theater façade.

The decorative elements of the building contribute to its verticality, while emphasizing each architectural element. Narrow office windows are recessed from vertical piers, obscuring the scale of the fenestration and creating the illusion of greater height. Beneath each window is a painted metal panel, decorated with a scalloped relief motif. The mottled turquoise terra-cotta tile cladding is fluted, enhancing the building's surface relief and reinforcing its upward thrust. The original ground-floor retail areas had modern plate glass windows and inset entrances, anchored by a low black granite bulkhead. Horizontal bands and cornices decorated with continuous patterns of fans, scallops, and chevrons called attention to the shops. Projecting second-story bay windows provided additional display.

Originally conceived as a vaudeville theater, the Warner Brothers Western Theater was designed by Albert Landsburgh with scenic murals and decorative painting by A.T. Heinsbergen. The flagship for the theater chain, it had an opulent interior boasting a symphony of chandeliers, a mural-bedecked lobby ceiling, and a dramatic sunburst on the auditorium ceiling. The theater housed a large pipe organ and a small orchestra pit. In addition, there were dressing rooms, lounges, and even a childcare area, or "crying room."

The theater opened with much fanfare in 1931, but quietly closed a year later; there were simply not enough people living in the vicinity to support it. It reopened in the mid-1930s, and functioned as a movie theater until 1979, when its fare had devolved to films like "The Bermuda Triangle" and "Attack of the Killer Tomatoes" playing to near-empty houses.

De Roulet sold the building to Franklin Life Insurance in 1956 and, although the new owners made no major changes, by 1970 they had placed it on the market. By 1979, despite its status as a City Historic-Cultural Monument and its presence on the National Register of Historic Places, Franklin Life applied for a demolition permit to clear the site and sell the vacant property. A lengthy process



ensued, and through the efforts of the Los Angeles Conservancy with the help of the National Trust for Historic Preservation, a feasibility study was carried out in order to attract a preservation-minded developer. Unfortunately, in the interim, Pacific Theaters, who had been asked to vacate and remove all their "leasehold possessions," sold many of the theater's original fixtures. Furthermore, in the removal process, the enormous plaster sunburst over the auditorium ceiling crashed to the floor of the theater and was destroyed.

At this point, our hero enters. Wayne Ratkovich had previously restored the Oviatt Building (see P/A, Nov. 1982, p. 112), and as someone who had been involved with adaptive reuse, he was aware of both the cultural and the financial benefits of this type of project. As an astute developer, he was also conscious of the development potential of the 4.4-acre site, located opposite a proposed metrorail station. He purchased the building and site, and hired Rossetti Associates to devise a masterplan for its development and renovation.

The original plan was to renovate the building and build a 750,000-square-foot, 30-story office and hotel building to the rear of the site. However, the economics of that proposal proved unfavorable, and a much smaller retail and restaurant development is currently being planned. From an aesthetic viewpoint, this is fortunate, since a 30-story building would overshadow the Pellissier Building.

The renovation consisted of three major elements: the modernization of the office tower, the restoration of the theater—more recently the Wiltern, for the intersecting streets—and the remodeling of the retail wings. The office tower remodeling, carried out by Rossetti Associates, was a matter of cleaning up the elevator lobbies, inserting new services, and removing old partitions. Each floor was gutted, with the exception of the elevator lobby and marble hallway floors, to attract tenants for larger office space. This strategy was successful, and the building has attracted a number of tenants in the design fields, who have created lively interior landscapes in the shell of the reinforced-concrete building.

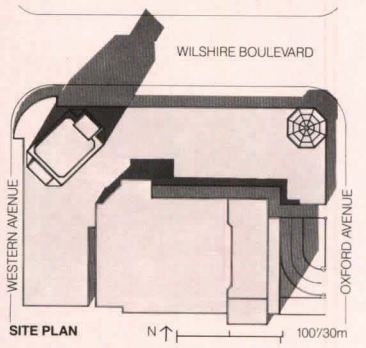
The theater was a far more heroic effort, involving restoration, re-creation, and redecoration. Levin Associates, who were the associated architects for the Oviatt Building and its ground-floor restaurant, Rex, were responsible for this part of the job, and for ground-floor modifications on the rest of the complex. Working with them were A.T. Heinsbergen, son of the original decorative painter, and Shephardson/Winner Theater Consultants.

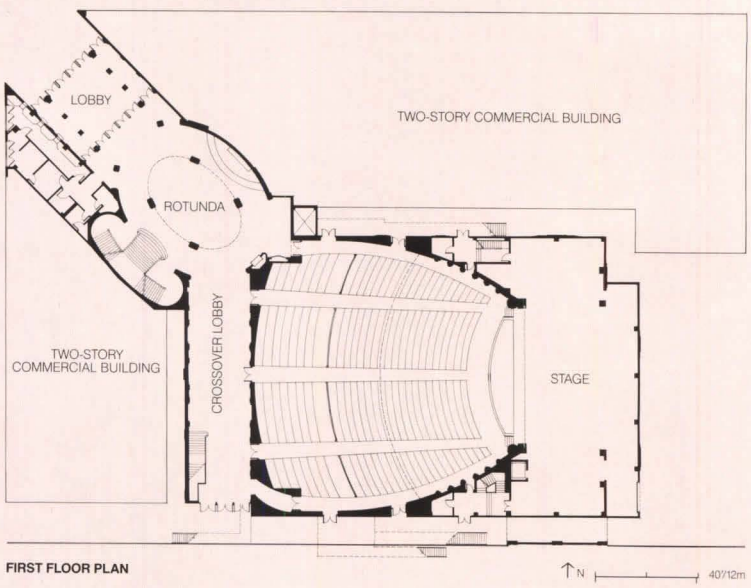
Since theater fixtures had been sold, they needed to be located, purchased, and restored, or, in some instances, replaced. A simplified replacement was created for the plaster sunburst on the auditorium ceiling, and this was painted in *trompe l'oeil* three-dimensional pattern based on original sketches, to replicate the original as closely as possible. Theater seats salvaged from the Paramount in Portland (see P/A, *Feb. 1988*, p. 57) were refinished and recovered. Murals were repainted, doors restored, and new carpet installed. In addition to restoration measures, parts of the backstage were redesigned to accommodate a larger range of live performances. Lighting was upgraded, the stage area and orchestra pit were enlarged, and dressing rooms were added. The theater was also brought into compliance with seismic, fire, and handicapped codes.

The biggest change to the interior was that the original wall color, a shade of orange, was replaced with more fashionable burgundy and rose. To complement the new colors, the original orange geometric patterned carpet was replaced with a new, Art Deco floral pattern using the new palette. Although strict preservationists object to the





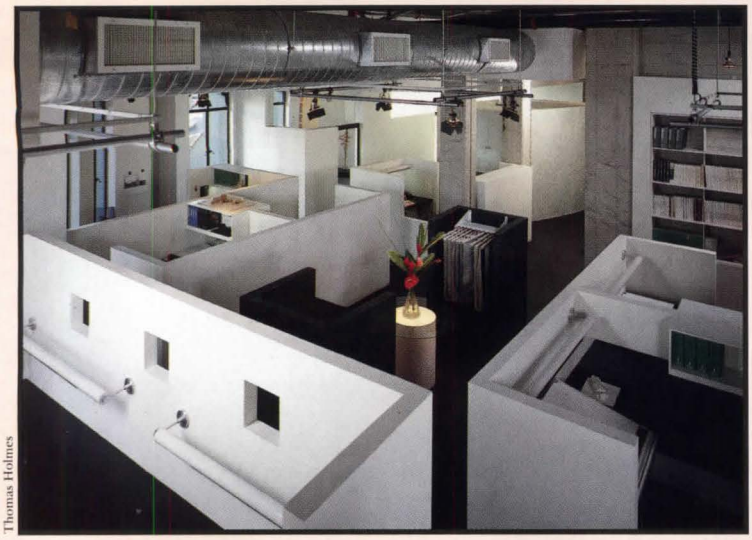




One location where the newly painted rose color of the walls clashes with the original orange color scheme is around the brightly tiled water fountains (top left). Seats salvaged from the Paramount Theater in Portland (top right) have been refinished and recovered. Typical of the detail everywhere, the newell posts and railings on the stair (facing page) are elaborately articulated, as is the wall surface ornament beyond.

The roof plan and first floor plan (above) reveal the simple organization of the building. A two-story, L-shaped commercial block wraps around the theater, which is connected to the street through a corner lobby.

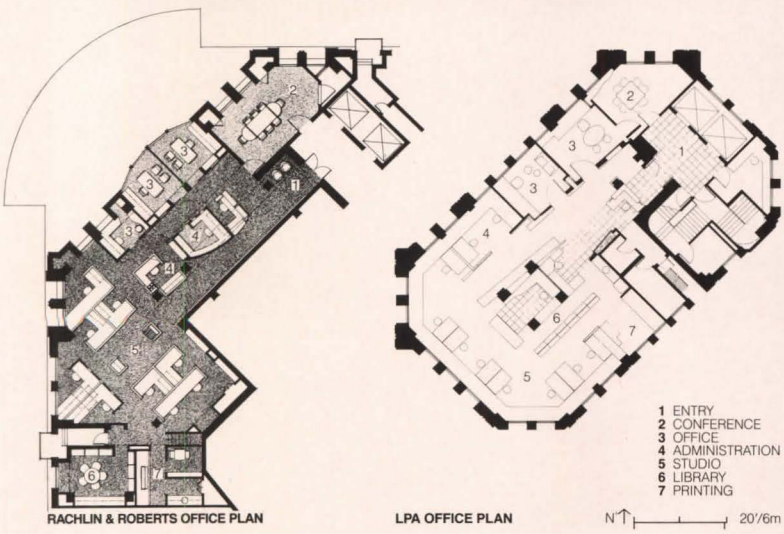




Thomas Holmes

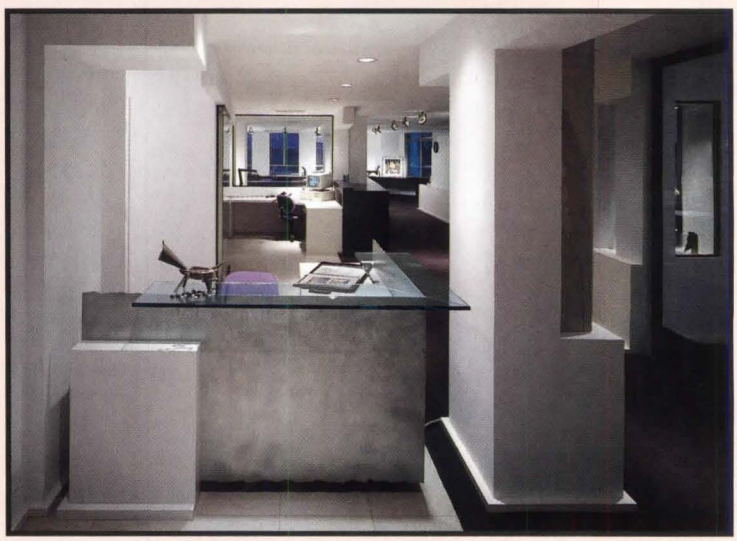


Charles McGrath



RACHLIN & ROBERTS OFFICE PLAN

LPA OFFICE PLAN



Charles McGrath

change of wall color, Brenda Levin argues convincingly that color is more a product of fashion than a matter of grave historic significance. Since the new colors are derived from the murals and other decorations, the result is harmonious, although perhaps inauthentic. The entire theater renovation was accomplished at a cost of $4.8-million. Operated today by Bill Graham Presents, the Wiltern Theater is a commercial success and a popular venue for varied events.

The remodeling of the retail spaces was, alas, not as successful as the renovation of the theater. Offices have been located in the second story and the first-floor retail has been drastically altered. Rather than repairing or restoring the existing plate glass store fronts, Levin replaced them with a façade that she felt would better meet the program for restaurant use. Her solution was to infill the ground floor façades with a regular grid of flat green ceramic tiles similar in color to the turquoise of the building. While the color is harmonious, the surface and module are dissonant. Small new plate glass windows were inserted into this wall, following the grid of the bay windows above. The result is not only crude compared to the original design, but the new silver-colored anodized aluminum window frames are visually jarring. Since the ground floor houses restaurants and retail not unlike those in the original building, it is difficult to defend such a drastic change. The only mitigating elements are awnings over the shops, which approximate the originals and somewhat obscure the impact of the new ground-floor cladding.

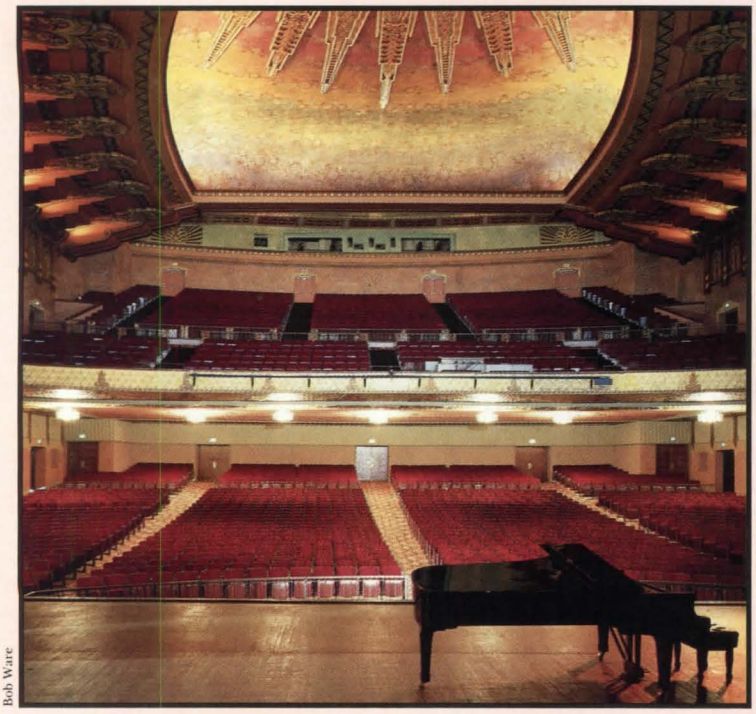
The first tenant occupied the renovated building in December 1982, and the theater reopened in May 1985. With the building almost entirely leased, plans for the second phase, to be designed by Leason Pomeroy Associates, are progressing rapidly. While our heroine has been rescued for the present, we eagerly await the sequel.

Barbara Goldstein ■

Two architectural offices are among those now located in the Pellissier Building. The offices of Rachlin & Roberts (top left and plan, far left), situated on the main office floor, comprise a series of pristine, freestanding work stations within exposed concrete walls. In the Leason Pomeroy Associates offices, surfaces and volumes around the conference room (above, top) and the reception area are typical of the architects' artful manipulation of both existing and new elements. In both offices, the designs allow the existing structure to become the final surface in some areas. The conference room ceiling at Leason Pomeroy, for instance, is a floating panel that makes no attempt to conceal the underside of the floor slab above.

Hallways leading to the theater auditorium (facing page) feature an exotic landscape of tropical plants and colors. New Art Deco patterned carpet complements the newly changed wall colors and the floral theme.





Bob Ware

Project: *Pellissier Building/Wiltern Theater Renovation, Los Angeles.*
Original building architect: *Morgan, Walls & Clements.*
Original theater architect: *G. Albert Landsburgh; original interiors, A.T. Heinsbergen & Sons.*
Office tower remodeling: *Rossetti Associates.*
Theater and retail space remodeling: *Levin & Associates, Los Angeles (Brenda A. Levin, principal; Maureen Sullivan, project architect).*
Client: *Ratkovich, Bowers and Perez; Wayne Ratkovich, partner in charge; Jack Germain, construction manager.*
Site: *entire city block frontage on Wilshire Boulevard between Western Avenue and Oxford Street, with shorter frontage on those streets.*
Program: *renovation of 1929 Pellissier Building, with major emphasis on restoring the Wiltern Theater; included were seismic upgrade work, new electrical, mechanical, and fire/life safety systems, extension of stage and orchestra pit, new concessions and box offices.*
Structural systems: *existing concrete-encased steel frame, cantilevered steel-framed balcony, and wood truss and steel roof structure; the seismic upgrade included braced steel frames to tie balcony to the existing shell structure.*
Major materials: *plaster, paint, tile, carpet (see Building Materials, p. 191).*
Mechanical systems: *new air-conditioning system reuses existing fan and ductwork in the floor; additional return grilles were added.*

Consultants: *Engelkirk & Hart Engineers, structural; Ray Shepardson/Sonya Winner, theater consultants; Bill Counter/Aardvark Electric, electrical; Tony Heinsbergen/A.T. Heinsbergen & Co., interiors, decorative painting.*
Contractors: *Turner Construction, Special Projects Division; R.W. Stanhope Company; Pacific Coast Painting; Amelco Electric; Muir Chase Plumbing; Acco Air Conditioning.*
Costs: *$5.2 million.*

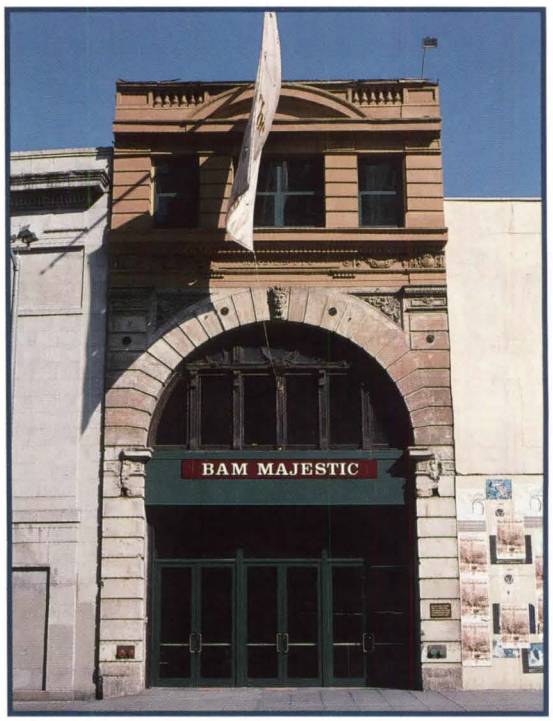
With its conscientiously restored decoration and refinished antique seating, the Wiltern Theater's interior is one of the most opulent examples of Art Deco auditoriums in Los Angeles. The sunburst relief on the ceiling, destroyed before the restoration began, was reconstructed according to A.T. Heinsbergen's original sketches.

Randall Michelson



BAM Majestic Theater
Brooklyn, N.Y.

A Celebrated Dissolution



Drawing from director Peter Brook's home theater in Paris, Hardy Holzman Pfeiffer Associates and the Brooklyn Academy of Music have created a unique neo-old theater from a crumbling hulk.

CAN acts of omission ever add up to architecture? Is black tie appropriate for opening night in a ruin? Architects Hardy Holzman Pfeiffer Associates answer in the affirmative, to both. Asked to renovate the abandoned and deteriorated Majestic Theater for the Brooklyn Academy of Music (BAM) on a slim budget, the architects and their client opted to question the traditional approach to theater design "as the means to represent a universal idea of order." Instead, they chose to enhance the ruin.

Built in 1903 as a neighborhood theater, Brooklyn's 1700-seat Majestic had an active earlier life, serving at one point as a tryout facility for Gershwin musicals. As it reflected changes in demographics, performing arts practices, and uses over time, the theater walls accumulated layers of paint; since its abandonment in 1968, years of deterioration had set in, causing roof failure and subsequent water leaks, frost damage, and crumbling plaster.

From the inherent drama generated by a savaged building interior, HHPA took cues that led the design toward enhancement, rather than sanitization, of the expressive remains. As it existed, the theater was anything but intimate, an attribute the clients and architects sought for the new space. The goal was to make the space into more of a Greek amphitheater or arena; to create a 62-foot-deep stage, the performing surface has been raised 5 feet, and carried 21 feet forward of the proscenium. What had been the main floor seating area was also raised, and the former first balcony becomes the main floor, with seating extended six rows. The remaining balcony has been cut back five rows to ensure good sightlines.

An overriding effort obviously has been to create an impression that the interior of the auditorium has not been touched. Although new mechanical and electrical systems, fireproofing, floor surfaces, and seating are included, some of the more intensive interventions are not at all obvious. Plaster work was left alone where possible, but where that was not viable, it was repaired; then it was purposely "distressed" by scenic designers, and hand painted to look like what had been there previously. It was not often easy for workmen to accept the idea that others would descend on their freshly renewed surfaces, intent on erasing any sign of the reconstruction. City building officials had equal difficulty accepting the fact that a "new" facility could be allowed to look ruined.

Conventional seating has been replaced by upholstered benches on the main floor; seating in the balcony is on a form of high stools with backs and small armrests. As in most legitimate theaters, the balcony pitch is enough to give pause to the faint-hearted; that, in conjunction with the seating, serves to make certain that theatergoers refrain from dozing during the performance. A nonparticipating observer can only speculate about what it must have been like to sit through eight hours of the opening epic, the "Mahabharata."

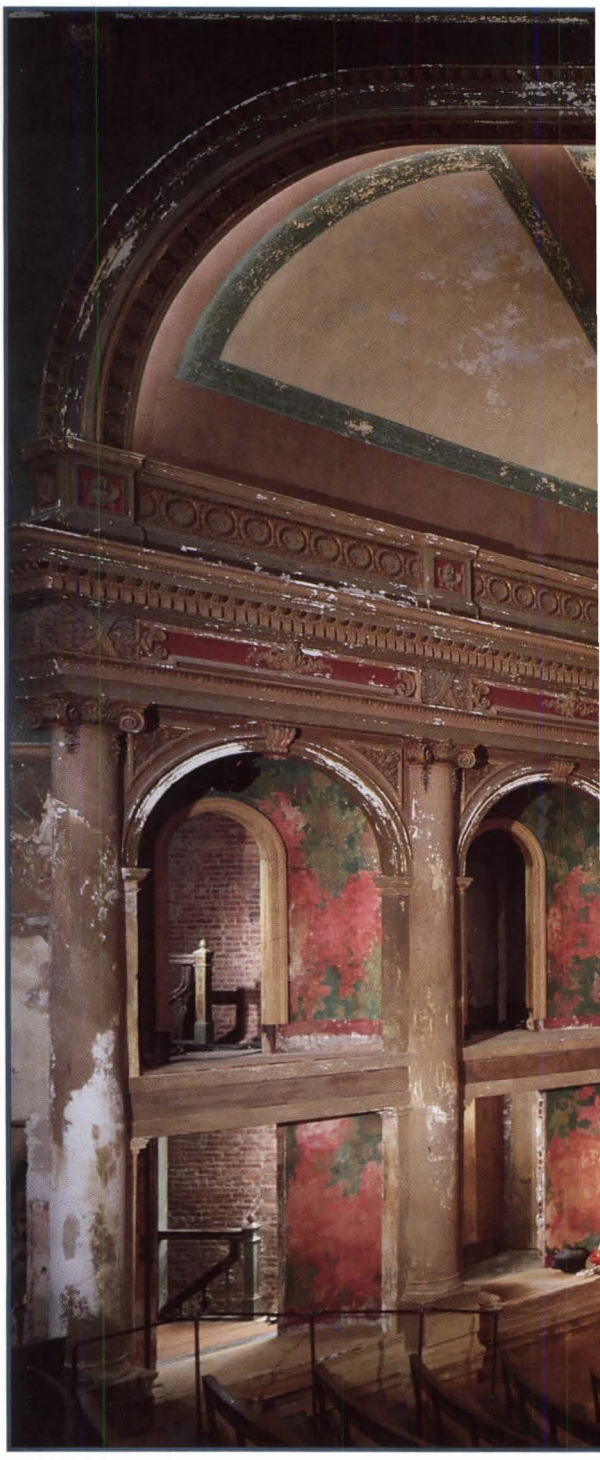
Some critics have attacked the cost of creating a ruin, others have called the parti faulty for being too much directed by the maiden presentation, and warned that the effect will be fleeting, and appear dated quickly. But HHPA has created an undeniably gripping space for theater, and at a cost far less than a new or restored theater would have cost. The Majestic IS theater, and an unforgettable performance, at that. ***Jim Murphy*** ■

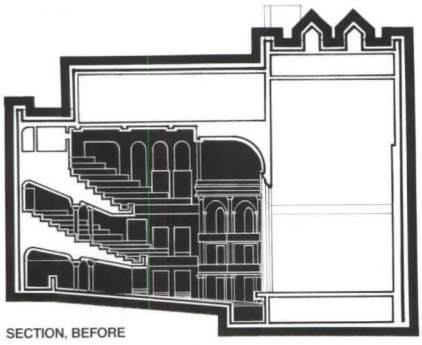


New entry doors replace the previous blocked opening (facing page). Before renovation (inset), the theater was three tiers high, with railings on the boxes, two balconies, and a standard proscenium. Even with new seating, floor changes, and lighting, the "new" theater still looks as if it is in the process of deteriorating. The pool of water on stage represents eternal life in the first stage production, "The Mahabharata."

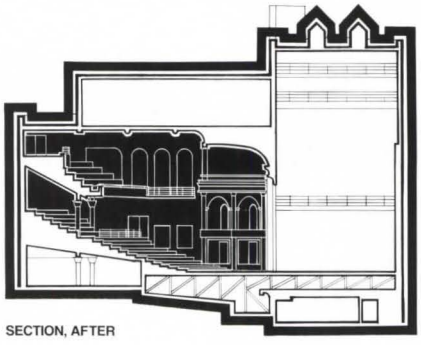
BAM Majestic Theater
Brooklyn, N.Y.



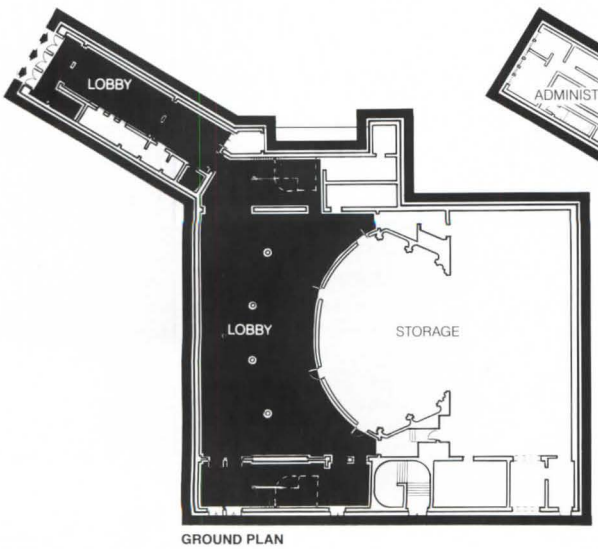




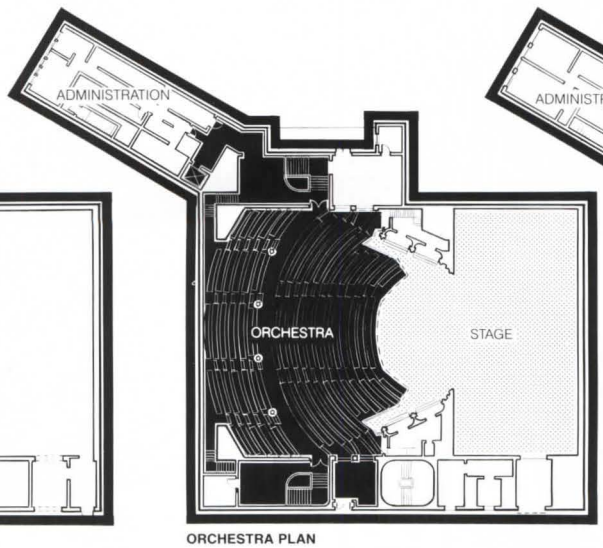
SECTION, BEFORE



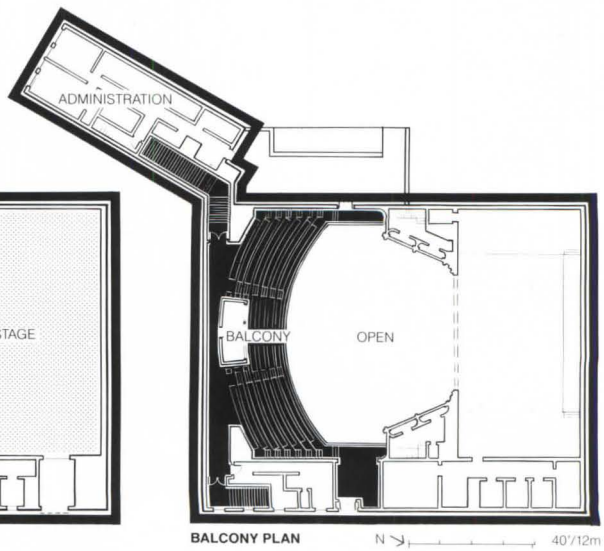
SECTION, AFTER



GROUND PLAN



ORCHESTRA PLAN



BALCONY PLAN

N 40'/12m



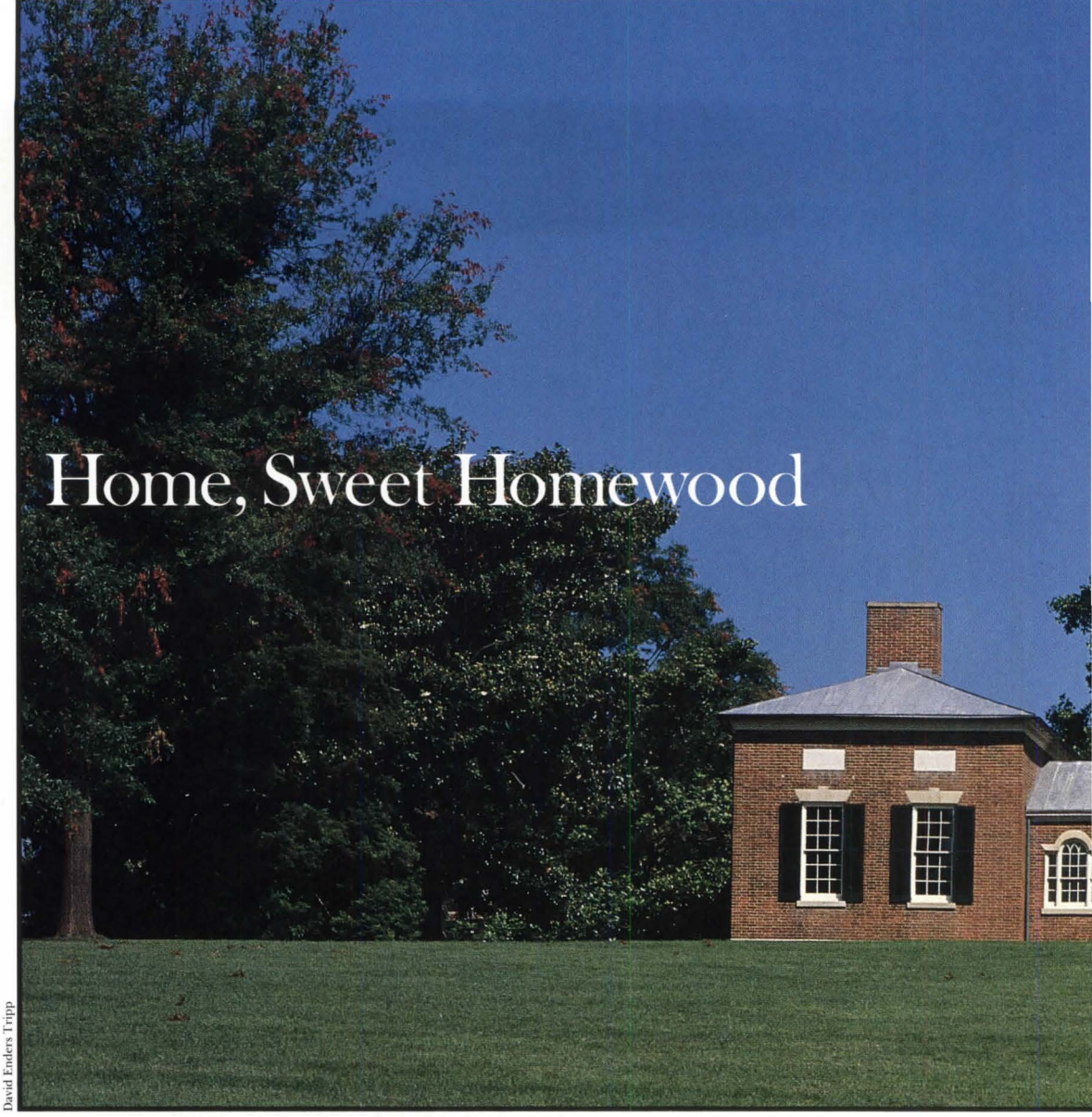
Where ceilings had crumbled away exposing steelwork (facing page, top), the steel was fireproofed, painted out, and left exposed. At its new level, the stage actually flows into the first row of seats (above), increasing the sense that the audience is part of the production. Although some of the surfaces have been repaired, in some cases extensively, the subsequent scenic design camouflage has made even the new parts look decomposed. Niches that once housed viewing boxes have had their railings removed and are used for dramatic entries by the actors. The back wall of the stage has been altered imperceptibly, and battered "footings" in the corners put a base on brick shafts added to handle mechanical services.

Before and after sections (facing page, center) clearly illustrate the changes made in the interior volume, seating, and stage of the Majestic; current plans show new seating, stage, and lobby.

Project: *The BAM Majestic Theater, Brooklyn, N.Y.*
Architects: *Hardy Holzman Pfeiffer Associates, New York (Hugh Hardy, partner in charge; Victor Gong, administrative partner; Evan Carzis, project manager; Jack Martin, project architect; Steve Derasmo, William Boling, Gilbert Sanchez, Candace Renfro, Brian Wurst, team architects; John Bossung, construction coordinator; Darlene Fridstein, Robin Kunz, interiors).*
Scenic designer: *Chloe Obolensky.*
Client: *The Brooklyn Academy of Music, Harvey Lichtenstein, president.*
Site: *part of an urban block in the Fort Greene section of Brooklyn, 15,000 sq ft with primary frontage on Fulton Street.*
Program: *create a 900-seat theater with support space, lobby, and administrative area.*
Major materials: *paint, hemp carpet, seating upholstery fabric (see Building Materials, p. 191).*
Mechanical system: *gas-fired forced hot air with air-cooled air conditioning.*
Consultants: *Purdy & Henderson Associates, structural; Piccirillo & Brown, mechanical; Jaffe Acoustics, acoustical.*
Construction manager: *Integral Construction Corporation.*
Costs: *$5 million.*
Photos: *finished interiors, H. Durston Saylor © 1987; exterior and earlier interior, David Epstein.*

Homewood
Baltimore, Maryland

Home, Sweet Homewood



David Enders Tripp

The restoration of this Federal-style landmark has uncovered not only the house's brilliant decor and innovative technology but the talent of its original owner and designer.

IF buildings could take endurance tests, Baltimore's Homewood would come through with flying colors. It has seen incarnations as a private home, boys' school, college dormitory, faculty club, house museum, and Johns Hopkins University administration building. Still a focal point for the campus, Homewood, now a National Historic Landmark, has remained virtually intact from its initial construction in 1806 until its recent restoration by architects Mendel, Mesick, Cohen, Waite, Hall.

In 1800, Charles Carroll of Carrollton (a signer of the Declaration of Independence) gave his son, Charles Carroll Jr., a 122-acre tract of what was then rural land near Baltimore as a wedding gift. The elder Charles suggested that the couple renovate existing farm buildings on the property, but his son had a more sumptuous dwelling in mind. By May 1802, the father had grown weary of his son's requests for more construction funds: "I cannot support these heavy and frequent changes . . ." he wrote. However, the avalanche of bills continued; in 1803, the father again admonished his son for constructing "buildings on Homewood which will not fall short of $40,000," an enormous sum then even for one of the wealthiest men in the United States. But Charles junior, a spendthrift and later an alcoholic, spared no expense and devoted his days—he had no marketable trade—to Homewood.

Historians have been unable to find mention of an architect, nor payments made to one, although Carroll did work with the contractor, William Edwards, from the outset. Carroll apparently drew his ideas from architecture and pattern books that both he and his father collected. He had visited many elegant homes while studying in Europe and kept abreast of the most fashionable American house designs, including those near Baltimore.

Homewood is a Federal-style structure with a central block flanked by smaller wings. The second floor of bedrooms, which rests atop the first floor entertainment rooms, is camouflaged by elongated windows, a tall portico, and a deep cornice. The doorway ornament is elaborate: Four columns support the pediment, itself decorated by plaster swags of ribboned cloth and a heraldic window. Two attached columns provide a larger frame for the doorway while two smaller fluted columns flank the door itself and support another distinctive cornice above the fanlight.

Carroll's Homewood reflects his interest in the latest inventions and building techniques. For example, the original roof had wood shingles, a typical choice of material for the period. However, its design was very unusual. "Rain water was considered better than well water for some uses, so Carroll developed an ingenious method of collecting it," explains house historian Mary Butler. The original roof pitched to the center, causing water to accumulate, and multiple peaks covered huge cisterns. Water overflowed from the north porch into a cistern and from there to the house. In an attempt to have a constant supply of hot water, Carroll placed another enormous cistern over the kitchen fireplace. Because the original roof leaked almost immediately, Carroll covered it with a new, standing-seam tin roof. The architects have returned Homewood to this roof configuration. "Rather than invent history, we chose a roof well



documented to the 1850s," says restoration architect John Waite. (The leaky roof may have prevented the couple from furnishing the house and from applying final coats of paint to the primed walls; account books reveal that Carroll paid most of the paint and upholstery bills in 1806, four years after moving in.)

Homewood features fireplace, molding, chair-rail, and cornice patterns distinctive to each room and to this house. With the help of a superb restoration craftsman, Douglas Clinton, the architects unraveled certain mysteries. They removed partitions, downlights, and acoustical tile ceilings to reveal the original plasterwork cornices and central medallions—all unharmed despite the home's various incarnations. They replaced floorboards drilled to accommodate telephone wires and removed HVAC equipment revealing an ample kitchen and multicave wine cellar. Under wooden doorstops original to the house, they discovered the correct marbleizing pattern for each baseboard. Because a 1930 restoration had stripped most of the walls bare, detective work was required to uncover original paint colors which, after a paint analysis, turned out to be a bright palette: vivid green walls with light green woodwork set off by white trim. They also uncovered a ghostly silhouette on the kitchen wall indicating precisely where shelves had once been; these will be replaced based on shelving that survives in a hall closet.

The carpets woven for the restoration are authentic to the period of the house. Susan Tripp, Director of University Collections, discovered in storage at Woodward & Grosvenor in England the point papers that delineate specific designs and colors used for carpets of this era, and she convinced this firm to weave the rugs for Homewood. Like the walls, the carpets employ bright colors.

"How to introduce state-of-the-art mechanical and electrical systems without damaging the house's fabric became our biggest challenge," Waite continues. "We recognize that this is not the last time that this building will be touched, and that problems occur sooner and more frequently with mechanical and electrical equipment than with the house itself. Therefore, we completely removed the equipment from the premises and buried it in a 30′ x 40′ vault, 150 feet from the house." A chase connects the vault to the building, where ducts remain in areas that already were disturbed by the 1930 restoration.

Architects Mendel, Mesick, Cohen, Waite, Hall are currently engaged in restoration work at both Monticello and the University of Virginia, and they see how closely Homewood resembles Jefferson's buildings. Homewood, like Monticello, makes its two stories appear as one, has a central skylight on the second floor and a wine cellar in the basement, and uses hidden side stairs rather than grand staircases. Carroll also followed Jefferson in his choice of an elevated site for his Classical villa.

That Jefferson connection even helped the architects in the reconstruction of Homewood's north porch. They replaced the missing balusters of the porch after determining their configuration from old photographs and matching their proposed silhouette with balusters at Monticello.

"We approach the house as would a conservator approaching a work of art," says Waite. "We bring

The façade of Homewood (above) is an exercise in artful concealment. The central block of the Federal-style house has a full second floor, although the tall first-floor windows and portico, the wide cornice, and the marble panels above the windows make it appear as if the house is one story with an attic. The hip roof of the central block also conceals multiple peaks that drain water to the center of the house and that cover large cisterns used to store rain water.



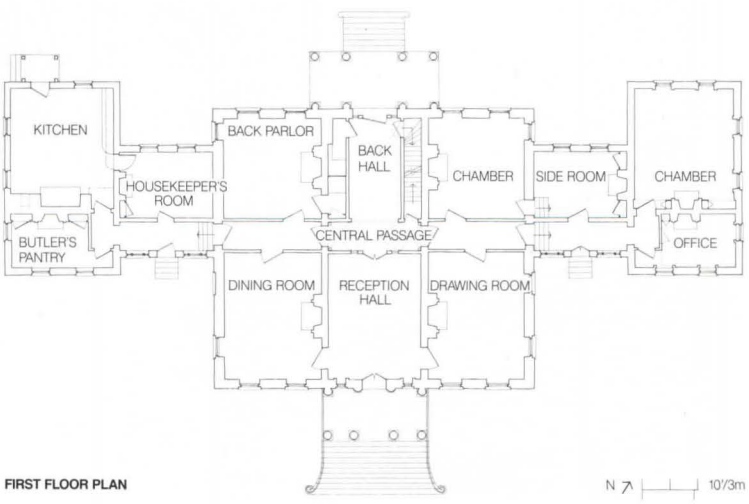
no preconceived ideas. Each building is unique, and authenticity is key. The first thing that we do is to prepare a historic structures report that tells us precisely the condition of every detail. We must know what situation we face before we know what to do." The firm also prepares working drawings that are unusually detailed: "We want to be sure that what is constructed matches exactly what our research determined, leaving nothing to the imagination of workmen. Future generations will know what was touched during our restoration."

Homewood is considered one of America's finest examples of Federal architecture and was much admired and copied in its own day. Because of the concern of the client and care of the architects, it is once again in a condition to be admired by the public. Aurelia Bolton, chairman of the Homewood Restoration Advisory Committee, praises the architects' work: "They stood their ground and insisted on perfection; I would give them four stars."

Leslie Freudenheim ■

The author is a freelance writer and historic preservation consultant in Washington, D.C.

The reception room (above) and passage that connects the main block with the side wings (facing page) have a bright palette of colors that was uncovered through careful paint analysis. These spaces also show the diversity and inventiveness of the Classical detail. While the house was largely intact, the restoration still involved a considerable amount of work, including the removal of inappropriate finishes and equipment, the repair of damaged ornament, the refinishing of walls and floors, the reconstruction of the original roof, and the placement of new mechanical and electrical equipment in a vault buried under the lawn.

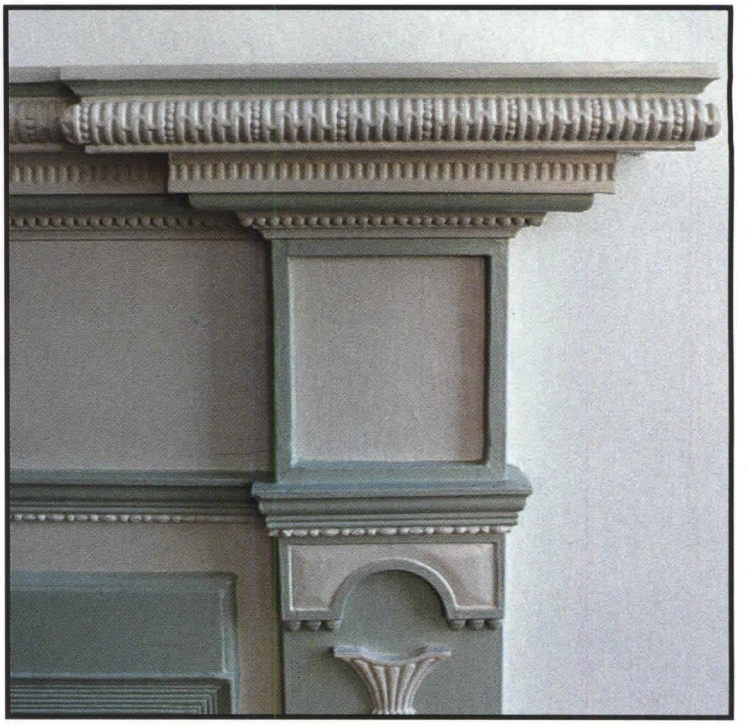


FIRST FLOOR PLAN

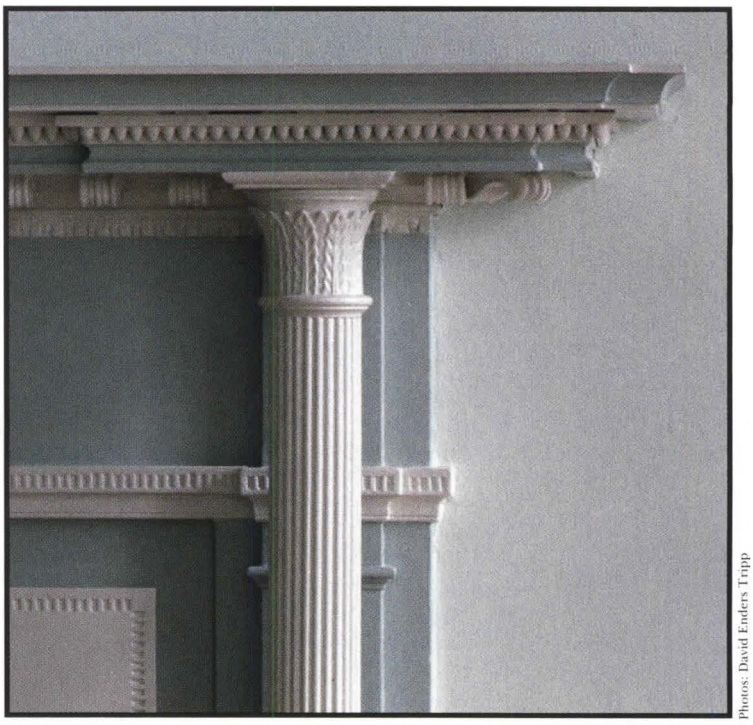


Homewood
Baltimore, Maryland









Photos: David Enders Tripp

The moldings in every room in the house differ. That is most apparent in the mantles, some of which have entablatures supported by engaged Ionic or Tuscan pilasters (above left), one of which has side panels framing engaged urns (above, top right), and one of which has columns whose tobacco-leaf capitals recall one of the orders that Benjamin Latrobe developed for the U.S. Capitol (above, bottom right). The restored rooms at Homewood (facing page) show the brightly colored walls and boldly patterned carpet, which was rewoven based upon period designs.

Project: *Restoration of Homewood, Baltimore, Md.*
Restoration architects: *Mendel, Mesick, Cohen, Waite, Hall Architects, Albany, N.Y. (John Waite, partner in charge; Charles Tonetti, associate responsible for construction documents and administration; Douglas Bucher, associate responsible for decorative finishes restoration; Carl Fitch, Lisa Lanni, William Perrotte, staff.*
Client: *The Johns Hopkins University.*
Site: *knoll on the Homewood Campus of The Johns Hopkins University.*
Program: *restore the building for use as a historic house museum.*
Structural system: *brick bearing walls with wood joists.*
Major materials: *lead-coated copper roof, reproduction carpets, paint colors, and graining (see Building Materials, p. 191).*
Mechanical system: *ducted forced-air system supplied by the university's central hot and chilled water system and located in underground concrete vault.*
Consultants: *Klepper, Hahn & Hyatt, structural; Savage Engineering of Maryland, mechanical; Barton Rinehart, security.*
General contractor: *Henry H. Lewis Contractors.*
Costs: *withheld.*
Photos: *Mark Darley except where noted.*



Beaux-Arts Under Glass

Continuing their renovation of the New York Public Library, Davis Brody & Associates have remodeled a room unusual for its use of metal and glass in Beaux-Arts design.



The 80′ x 80′ room, rising to a height of 30 feet at the top of the glass dome, makes an impressive setting for receptions, concerts, and lectures (above). Walls clad in colorful Sienese marble are punctured by windows looking out of surrounding spaces; on the west side (background above) are floor-to-ceiling slits on the module of the stacks behind them. Cast-iron structural components, combining exposed rivets with Classically inspired relief patterns (facing page), have been painted a neutral color close to the original, but in three tones to articulate the parts more clearly, then portions of the relief have been highlighted with gilt—another departure from the original treatment. Lights in the rosettes of the arches are new and give the space a more theatrical look than the original fixtures, which were not very graceful (lending library photo, page 112).

AROUND the turn of the century, the best of the Beaux-Arts architects enjoyed occasional flings with exposed metal and glass construction in structures such as trainsheds and exhibition halls. Representing this hybrid kind of design, but well hidden inside the properly monumental fabric of the New York Public Library (completed 1911), is the glass-domed room now remodeled as the Celeste Bartos Forum.

While the original architects, Carrère & Hastings, used the most correct Beaux-Arts Classicism on the major façades and grand public interiors of this library (many restored under Davis Brody & Associates' direction, P/A, Aug. 1986, pp. 88–95), they apparently felt that exposed metal and glass would distinguish this one room, originally the local lending branch, from the greater institution around it. The room sits at the bottom of one of the library's light courts and, although built with the rest of the library, it is conceptually a utilitarian (and asymmetrically placed) adaptation of found space, and one can imagine the architects wanting to express that in its design.

As with many of the library's major rooms, this one—prosaically known after the local branch left as Room 80—had been converted over the years into a rabbit warren of office cubicles. As more appropriate areas were remodeled for office use, it was decided to turn this space into a room for receptions, lectures, and recitals, a kind of space the library had never had. Reached directly through its own 42nd Street entrance—originally intended for the branch function—the room is ideally situated to separate public events from other library activities and for use when the rest of the building is closed.

What was not ideal for many of the intended events, however, was the skylight dome that spans the room. Adapting it for lectures and films required applying electrically controlled blinds over the glazed roof and installing a good deal of acoustically absorptive material, as well as a directed amplification system.

This has by no means been a pure preservation effort. One major change was the insertion of solid ceiling panels in place of the original glass over the perimeter of the room; this step simplified the daylight control problem, and it can be argued that it enhances the luminous dome by eliminating the fringe of lesser skylights, although it sacrifices the effect of a single glass-canopied courtyard. Totally new embellishments are the insertion of lights in the rosettes of the main arches and the gilt highlights on some of the cast-iron ornament; these are willfully inauthentic from a preservationist point of view and would have been too festive for the room's original use, but there is much precedent in design from the library's period. (The lighting recalls Adler & Sullivan's Auditorium, which has arches of similar curvature.) Other new elements are the fabric-covered panels on the fronts of the old bookshelves. (The library ruled out displaying books in a lecture/reception room.)

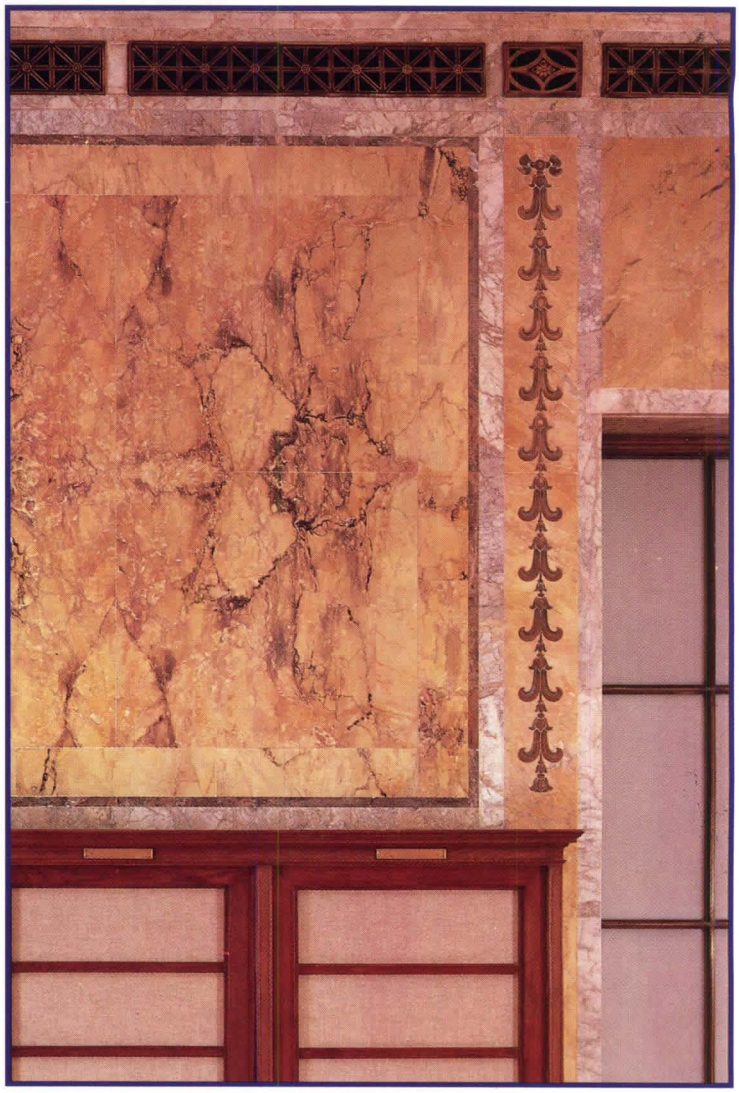
Though some of these alterations and embellishments are debatable, they work effectively together in reinforcing the room's powerful architecture, which has been newly revealed to the public.

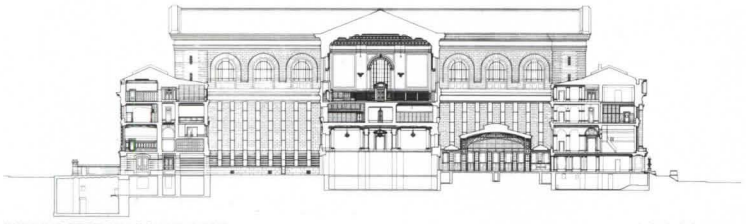
John Morris Dixon ■



Celeste Bartos Forum
New York Public Library

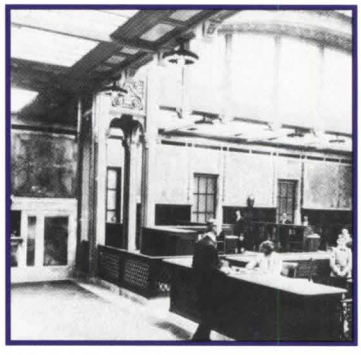






BUILDING SECTION LOOKING WEST

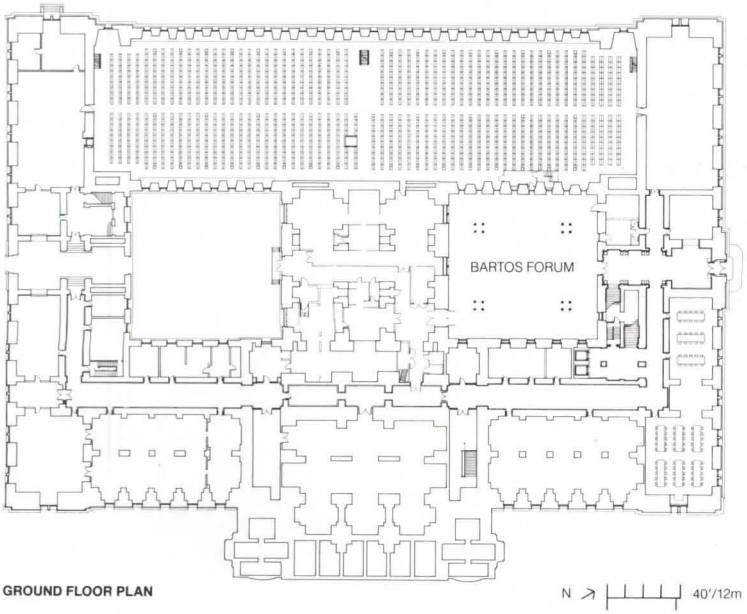
40'/12m



Courtesy NYPL



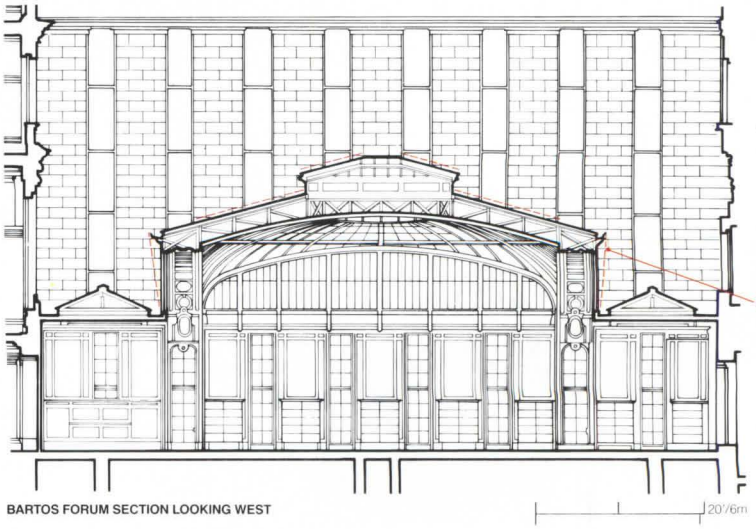
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GROUND FLOOR PLAN

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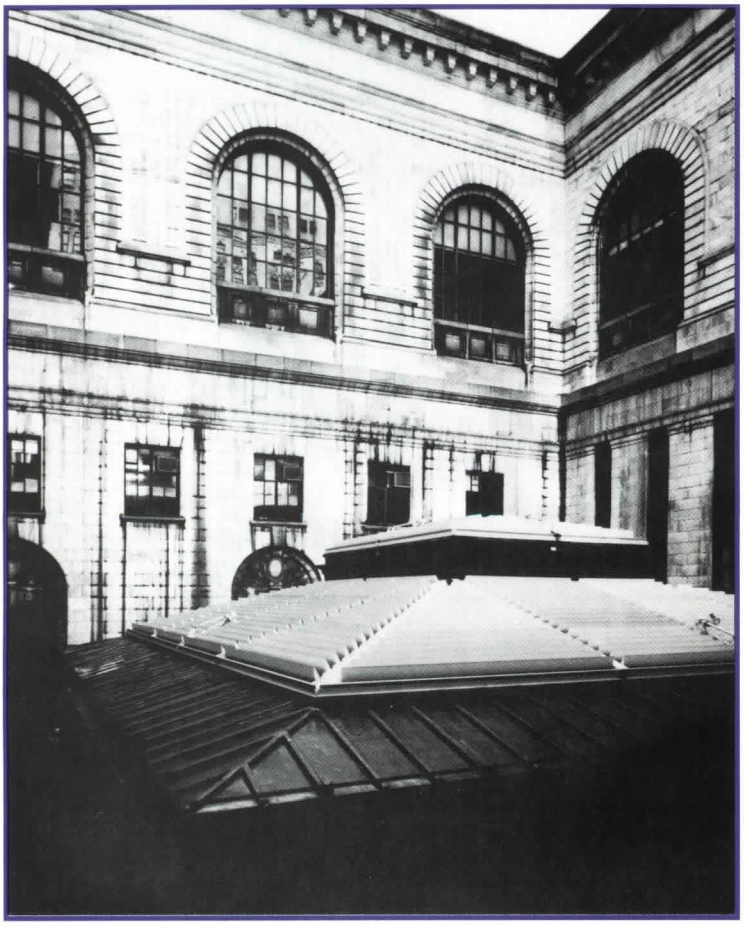
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BARTOS FORUM SECTION LOOKING WEST

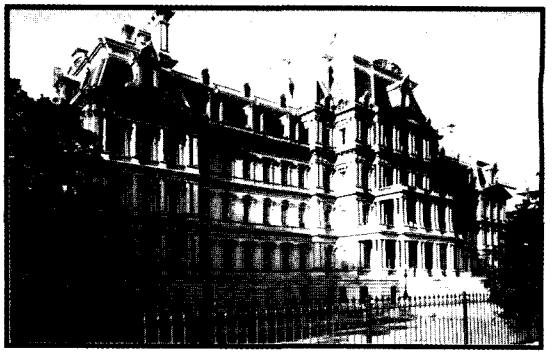
20'/6m





Remodeling revealed unexpected stone ceiling slabs (facing page, top left) under layers of paint. Walls of yellow and gray Sienese marble with bronze relief ornament (facing page, top right) needed only removal of clutter and dirt. Fabric-covered absorptive panels applied to fronts of bookshelves produce an odd variation on a familiar image. Stacking chairs (above) are covered in a reddish fabric unrelated to other colors in the room, as is arguably appropriate for such transitory items. The carpet, another acoustic absorber, is in two shades of taupe, chosen as neutral and harmonious with the painted iron. As the plans (facing page) show, the room has its own entry directly from 42nd Street to the north; parts of the block to its south have been turned into service kitchens, which are reached from caterers' trucks that can enter the library's other (uncovered) court. The room, which originally had more skylights, served first as a lending library, then as a labyrinth of offices (small photos, facing page). New electrically controlled louvers on the roof and clerestories (section, facing page, and photo left) can darken the room for slides or film.

Project: *Celeste Bartos Forum, New York Public Library, New York.*
Original architects: *Carrère & Hastings.*
Renovation architects: *Davis, Brody & Associates (Norman Dorf, project manager; John Torborg, project architect; Michael Lavoie).*
Client: *The New York Public Library.*
Program: *multipurpose room for public education, exhibitions, and special events; 6400 sq ft.*
Structural system: *structural steel and cast iron, exposed.*
Major materials: *Siena marble, white oak cabinets, bronze window frames, bronze relief ornament, white ribbed glass (doors and windows), clear glass coated for translucency (skylights), aluminum louvers (see Building Materials, p. 191).*
Mechanical system: *self-contained HVAC units, Smoke Purge System.*
Consultants: *Jules Fisher & Paul Marantz, lighting; John Altieri, mechanical/electrical; Harwood/Weisenfeld, structural; Smith-Meeker, audiovisual; Ostegaard Associates, acoustical.*
General contractor: *Integral Construction Corp.*
Costs: *about $3.5 million.*
Photos: *© Adam Bartos, except as noted.*



The Hundred-Year-Old Office

The Secretary of the Navy Office, restored by Kemnitzer, Reid & Haffler, is one part of the ongoing preservation of the Old Executive Office Building.

THIS is the centennial year for the Old Executive Office Building, sometimes irreverently referred to as that wedding-cake pile of gray granite standing immediately to the west of the White House. Built over the course of 17 years, from 1871 through 1888, the ornate Second Empire building has served at various times as home to the State Department, the Navy Department, and the War Department, until becoming an annex to the White House in 1949. The building's elaborately sculpted façades, mansard roofs, and central pavilions are the work of architects Alfred Bult Mullet and Richard von Ezdorf.

In 1983, a preservation office was established for the building directed to conduct research, develop a master plan, and oversee restoration work. Its remarkable progress is nowhere more evident than in the Secretary of the Navy Office, recently restored by architects Kemnitzer, Reid & Haffler of Washington, D.C.

The extent and faithful nature of the Navy Office preservation program can be seen even before one enters the room, as one encounters decorative columns flanking an entrance foyer set back from one of the building's characteristically long, tall corridors. Some of these foyers have been retained for major offices throughout the building, but most have been obliterated over time by partitions that extended to the corridor limits.

The Secretary of the Navy Office is a departure from earlier restoration efforts, dating from 1983, which of necessity employed lower-cost, inauthentic materials, such as bronze powder paint in place of prohibitively expensive gold leaf. For this restoration, numerous innovations were introduced. To somewhat reduce the cost of gold leafing, the gold leaf was first painted in a wide band and then overpainted with ornament, a less painstaking procedure than infilling the gold between the ornate patterns. Bronze leaf was also developed, but used in other rooms. Most interesting, and establishing a model for future work, was the procedure whereby only certain portions of the surfaces—a wide band on one of the walls, for example, and about half the floor—were brought down to the original material and authentically restored. The remaining surfaces, too far deteriorated in any case to allow practicable restoration, were replicated using the authentically restored parts as models. The room once again contains a wide variety of ornate interior paint schemes and motifs. When it came to replication of the mahogany, black cherry, and maple floor, the search for appropriate wood was complicated because precise matching of grain patterns requires the use of wood that was field grown, not plantation grown as is currently done. A solution was found by reusing wood from old floors and antique objects.

In addition to resolving such thorny problems in dealing with what had been there, the architects artfully accommodated updated mechanical, electrical, and security systems within massive walls and under the floor. Provisions have been made for linking these systems with future improvements planned for the building's central plant.

Furniture in the restored room is similar to that in the original room and, where possible, consists of actual original pieces.

The preservation office hopes soon to see appropriate restoration treatments extended to the building's corridors, now mostly white but originally nearly Post-Modern in their color schemes, and to other public spaces. Funding is a constant challenge. Fortunately, the office has been recently granted the authority to receive gifts and donations, and has obtained some restoration funds.

The Old Executive Office Building is a rare local example of cast-iron construction, boasting many unusual uses of the material. The epitome is the former War Department Library (now the White House Law Library), which is fashioned entirely of cast iron treated to look like other, finer metals.

Not only is the place a storehouse of period architectural tastes and conventions, it is also a laboratory for both technical and policy issues in historic preservation. Fine debates will surround such matters as whether to leave paint on balustrades. Fortunately, aside from some roof problems and skylights that remain blocked, the building is in good shape. Says restoration architect David Kemnitzer, "Really, the main problem is that it's covered with too much paint."

Beginning in May, the American Institute of Architects' Octagon Museum will host an exhibition on the Old Executive Office Building, with original design drawings, construction photographs, and a catalog prepared through the preservation office.

Thomas Vonier ■



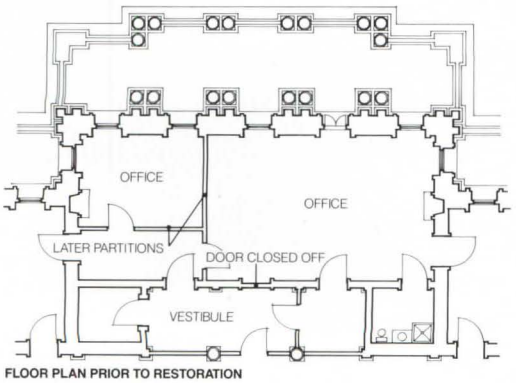
The Old Executive Office Building (facing page, top) employs the highly articulated and ornamented Second-French-Empire style, with its layers of Classical detail. The restored Office of the Secretary of the Navy (above) follows the same principles. Classical patterns and moldings cover every inch of the stenciled walls, carved mantles, and gilded mirrors.

Secretary of the Navy Office
Washington, D.C.

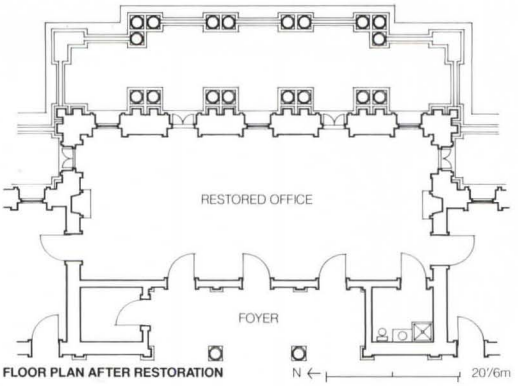




The office, prior to its restoration (left), had been painted white and obscured by pilasters and crystal chandeliers. The office also had been broken up into smaller rooms and the original foyer, enclosed (below). The restoration faithfully returned the office and foyer to their original condition (above and facing page). The stenciling on the walls and ceiling was restored, the gilding was renewed, the brass chandeliers were replicated, and missing pieces of maple, mahogany, and black cherry in the parquet floor were replaced.



FLOOR PLAN PRIOR TO RESTORATION



FLOOR PLAN AFTER RESTORATION

Project: *Restoration of the 1879 Office of the Secretary of the Navy, Old Executive Office Building, Washington, D.C.*
Original architects: *Alfred Bult Mullet; Richard von Ezdorf.*
Restoration architects: *Kemnitzer, Reid & Haffler, Architects, Washington, D.C.*
Client: *General Services Administration; Office of Historic Preservation, Old Executive Office Building.*
Site: *corner of 17th and Pennsylvania Avenue, N.W., just west of the White House.*
Program: *restore the office and foyer (1872 square feet in total) to their original appearance.*
Structural system: *existing.*
Major materials: *plaster and decorative painted surfaces, including gold leaf; wood mosaic floors (see Building Materials, p. 191).*
Mechanical system: *existing.*
Consultants: *Smith and Faass Consulting Engineers, Inc., mechanical/electrical; Matthew John Mosca, paint.*
General contractor: *Suburban Contractors, Inc.*
Costs: *$611,572 ($372 per sq ft).*
Photos: *Harlan Hambright, except as noted.*



National Gallery
Parma, Italy



Pristine Intervention

Charged with the restoration and reconfiguration of a 17th-Century palazzo, architect Guido Canali imposes a cool and delicate installation to expand the National Gallery of Parma.

THE austere, masonry exterior and monumental entry staircase hardly prepare visitors for the experience that awaits them in the recently remodeled National Gallery of Parma, Italy. The difference between exterior and interior is not a casual result, but the intent of architect Guido Canali, whose project, begun in the early 1970s, is finally nearing completion.

To comprehend the interior restructuring of the gallery, it is important to understand the Palazzo della Pilotta, the building in which it is housed. The Pilotta is an enormous edifice constructed by the reigning Farnese family in the early 17th Century to contain the stables, haylofts, and barracks for the ducal residence. Organized around two large courtyards with a façade extending more than two hundred meters along the River Parma, the Pilotta was always anti-urban, a purposefully inward-looking building.

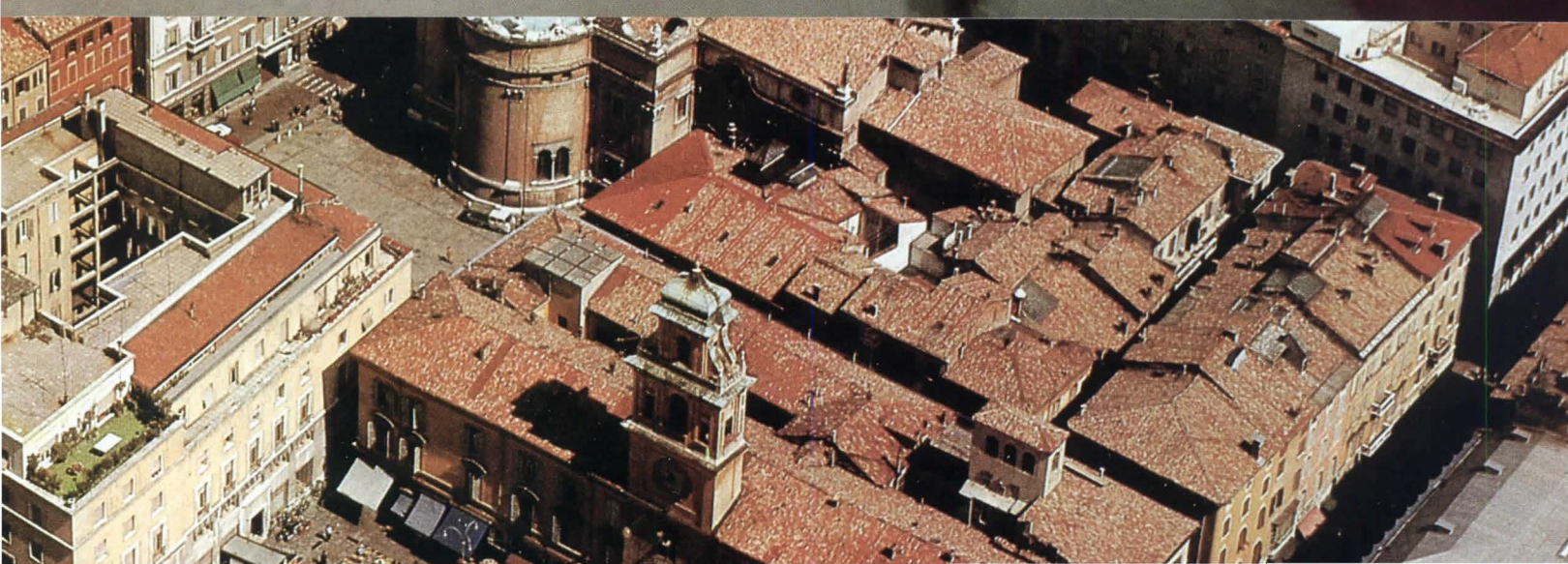
The subsequent history of the Pilotta has been one of constant transformation, demolition, and rebuilding—often with no plan or sensitivity to use. As early as 1618, the Pilotta's Arms Room was transformed into the wood-and-stucco Farnese Theater—a pivotal part of Canali's project. In the 18th Century, the Bourbons destroyed the old palace for a new ducal residence, which was never built. Napoleon continued this fragmentation by leveling the late Gothic church and convent of San Pietro Martire, originally part of the Pilotta complex.

Transformation continued in the early 19th century under the reign of Marie Louise, Duchess of Parma, who is credited with the first exhibition of the ducal collections. This involved reorganizing and constructing spaces in the Rocchetta, the part of the Pilotta that incorporates an ancient Visconti castle. So radical was this transformation that, even today, these rooms preclude any use other than that originally intended: the exhibition of Correggio's altarpieces. It was also Marie Louise who converted the north wing of the Guaz-

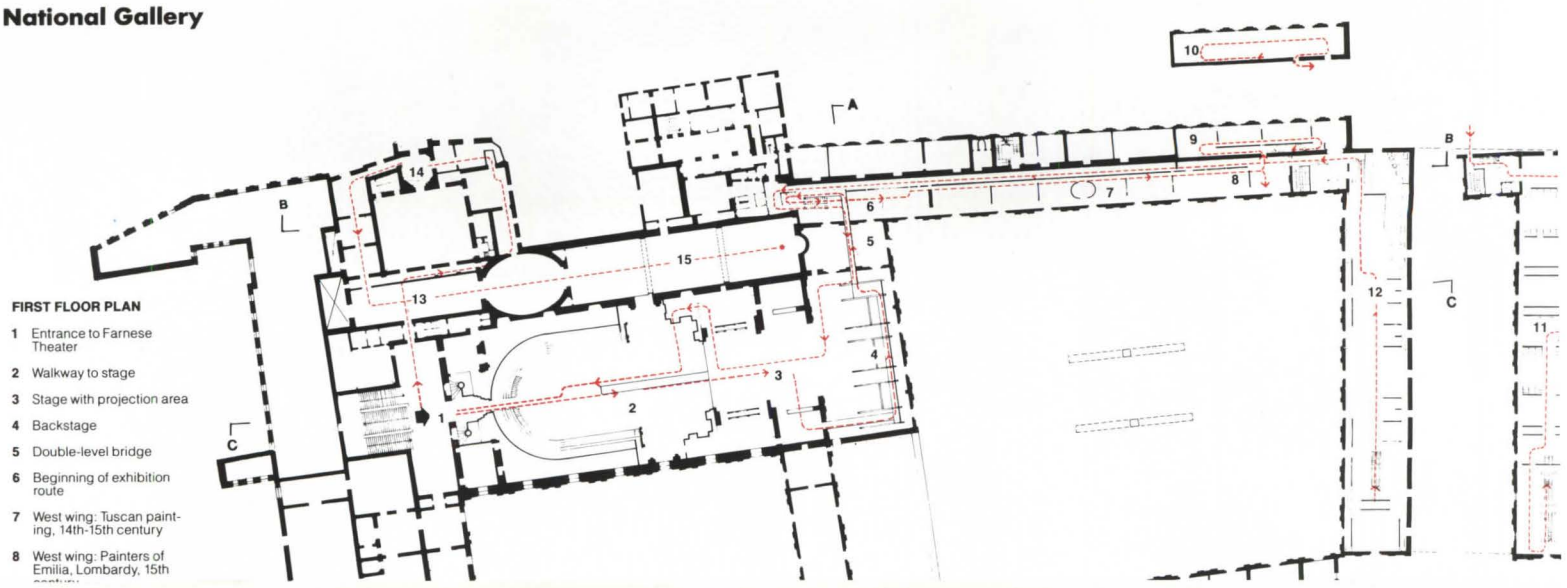
(continued on page 122)

The National Gallery's entry through the Farnese Theater offers a grand introduction along a shallow ramp to the gallery level. According to Canali, visitors first observe the theater as an historical object, then themselves become the protagonists of an ensuing sequence of experiences that Canali has prescribed with a clear linear organization. By treating the existing architecture as a dynamic partner with its own inherent values, Canali encourages visitors to interact with the environment. The graceful curve of the theater seating (top left) encloses the entry end of the theater.





National Gallery



FIRST FLOOR PLAN

1 Entrance to Farnese Theater
2 Walkway to stage
3 Stage with projection area
4 Backstage
5 Double-level bridge
6 Beginning of exhibition route
7 West wing: Tuscan painting, 14th-15th century
8 West wing: Painters of Emilia, Lombardy, 15th century

National Gallery



(continued from page 118)

zatoio courtyard into quarters for the ducal guards. Subsequent transformations were obliterated by Anglo-American bombardment in 1944, though some restoration was done in the post-war years (the Farnese Theater was completely rebuilt). But the Pilotta largely retains the character of its tumultuous past: it is both a perpetual worksite and an immense ruin.

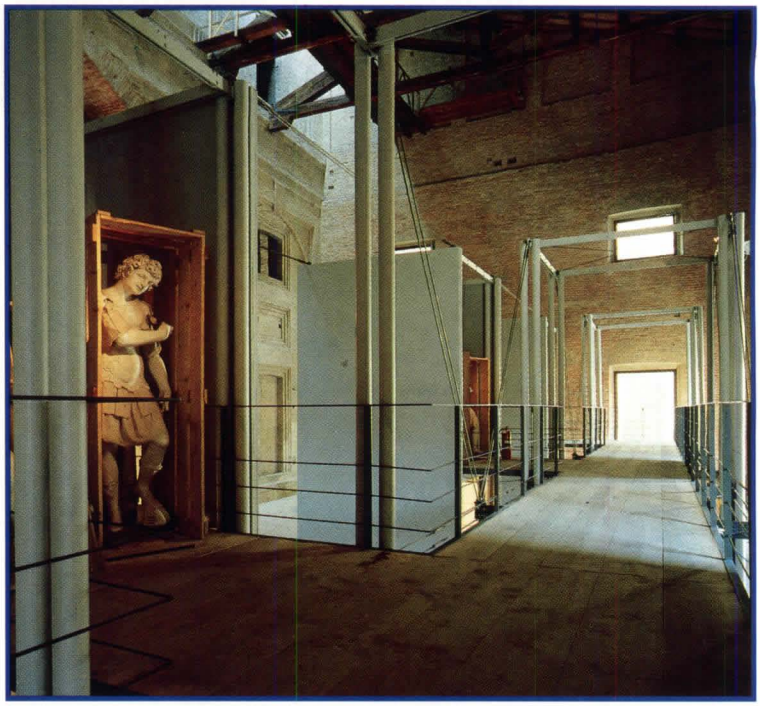
Given this history, the current restoration by Canali can be viewed as but the most recent in a series of transformations, rather than a radical alteration of a pristine Mannerist palazzo. The project began when the military ceded the north wing to the museum, creating the possibility of exhibition space for new acquisitions and works formerly in storage. The architect's task was to incorporate this wing into the already existing spaces, rationalizing the circulation system but maintaining the collection's strict chronological organization. Adequate lighting, security, and temperature/humidity control were to be provided, as well. The project also had to integrate the reconstructed Farnese Theater and respect the often less-than-convenient location of institutions in the Pilotta such as the National Museum of Antiquity, the Palatine Library, the University Institute of Art History, and the Institute of Art. The last occupies almost half of the west wing of the National Gallery, greatly complicating circulation and access.

The logistical problems were formidable, especially given the fragmentary character of the building. Yet, it is this very fragmentation of the Pilotta that Canali uses as his point of departure. Rather than attempting to restore the structure, he has designed an interior that reflects a sense of perpetual transformation. Through the use, for example, of ordinary scaffolding for the north wing's support system, he creates a structure that is flexible and that lends an air of impermanence, even precariousness, to the worksite. The lightness and industrial quality of the new materials clearly distinguish them from the historic fabric. Here, too, Canali has emphasized rather than downplayed the many alterations to the building by exposing historical elements such as the vault of the original stables. In this way, the museum speaks not only about its contents—the paintings—but about the building itself. The architecture is perceived not as a passive container, but as a dynamic partner with its own historical and aes-

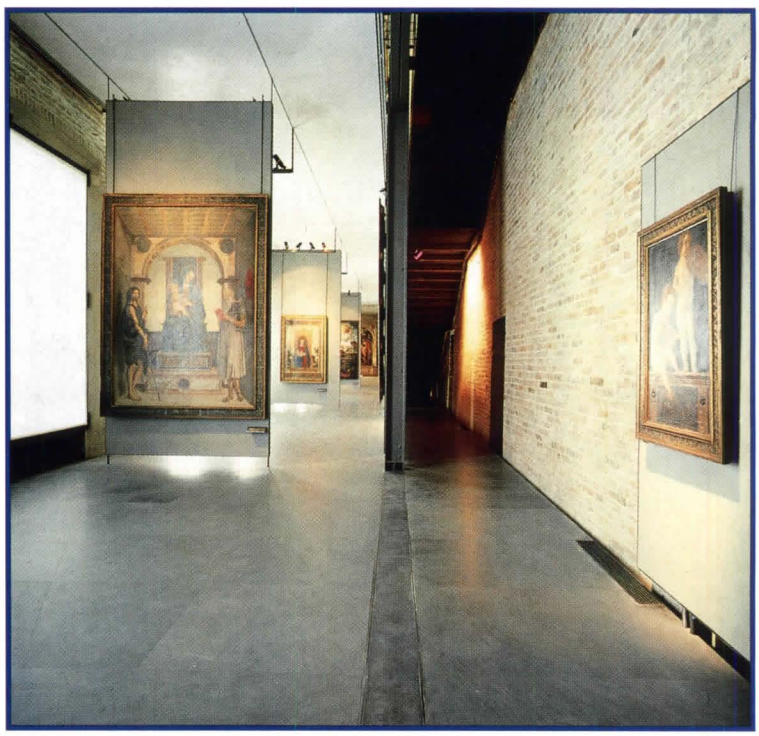


This view down the length of the north wing (facing page) shows the delicate, scissors-like staircase that occupies the transitional zone between the west and north wings. The stair's slender components offer minimal spatial interference and convey a precariousness that the architect has sought throughout the project. The lower level of the west wing (above) features an exhibition area with overhead gallery. Predominant here are the cool gray tones of the sandstone floors, iron display elements, and suspended exhibition panels with a gray, encaustic-type finish.









thetic values. Visitors are urged to interact with the environment and works of art, rather than merely observe. Canali has, in fact, designed the prescribed route through the gallery so as to create a series of changing spaces, levels, and environments.

Within the context of Italian museums, Canali's work here has proved unusual and controversial. Granted, he has functionally upgraded the National Gallery of Parma and greatly expanded exhibition space. But, on an aesthetic level, some argue that his remodeling overwhelms the collection. His supporters counter that the dramatic contrast of the support system against the displayed works allows each to maintain its identity.

More pertinent is the relationship of Canali's design to the ancient Pilotta. The project cannot be termed a traditional restoration, for the only part of the building restored to its original appearance is the Rocchetta zone. Instead, the already completed project for the west and north wings is better described as the insertion of a new structure within the shell of an old one. By treating the Pilotta as an archaeological object, Canali has respected and, theoretically, enhanced the historic structure through opposition. The solidity and geometric severity of the ancient building are underscored by the flexibility and impermanence of the new interior. Similarly, the irregularity and warmth of the historic masonry are accented by the superimposition of rigid, metallic industrial materials.

Given the Pilotta's humble origins and the severe transformations it has suffered through the centuries, Canali's choice can be considered valid. The unfortunate aspect of the design is in relegating the Farnese Theater to entrance/exit status. While appropriate to the idea of museum as spectacle, such a use undermines the meaning of the theater in the complex. Undoubtedly, the architect was constrained by rigid chronology in the museum itinerary, as well as by the inaccessibility of the Institute of Art. But perhaps a future reorganization (or transfer) of the institutions in the Pilotta may, in the end, yield a more sympathetic solution. ***Jeanne Marie Teutonico*** ■

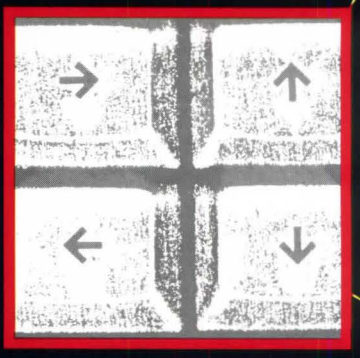
The author is a technical consultant with the International Center for the Study of the Preservation of Cultural Property, based in Rome.



The lower level of the west wing (facing page, top left), combines a gray tonality and directional lighting to create a solemn, understated environment. C-shaped panel structures (top right) support the backstage walkway and accommodate temporary exhibitions. The lower level of the Sala del Torrente (bottom right) has a brooding feeling. The mood shifts drastically in the north wing (bottom left), where Canali has sought to recover the open spatial character of the original Farnese hayloft. Here the illumination is primarily natural, provided by skylights that extend the full length of the roof on both sides of the gallery. The elevated walkway (above) leads around the backstage area, across the narrow courtyard, and to the west wing. Here Canali offers a modern-day interpretation of the precarious wooden catwalk resting on the trusses overhead.

Project: *National Gallery, Parma, Italy.*
Architect: *Guido Canali.*
Client: *National Gallery Parma.*
Site: *Farnese Theater and several wings of the Palazzo della Pilotta in Parma.*
Program: *Expansion of an art museum within a 115,600 sq ft section of the Palazzo della Pilotta. Requirements included the incorporation within the museum of the historic Farnese Theater and the maintenance of other autonomous institutions in the building, plus the provision of lighting, security, and temperature/humidity controls.*
Structural System: *Brick bearing walls with wood truss roofs and structural steel insertions.*
Major materials: *Exposed brick walls and wood roofs, exposed steel structures with wood plank and industrial grille flooring, plaster ceilings and gallery floors of polished concrete and Carniglia sandstone. Exhibition support panels of gypsum covered with stucco.*
Mechanical system: *Forced air.*
Consultants: *Zuelli Fratelli, electrical; Protel-Ponzi, security system.*
General Contractor: *Pinazzi Costruzioni.*
Costs: *Not available.*
Photography: *Mario Carrieri, except as noted.*

P/A Technics
The Maturing Micro



Microcomputers, in just six years, have gone from playing a minor part to the leading role in computer-aided design and drafting. They are now a powerful tool with a remarkable range of applications.

THE computer industry often mimics the machines that it makes, consistently exceeding everyone's calculations. Take microcomputers. Six years ago, they barely made a mark in the computer-aided design and drafting market. While they were low in price, their slow speed and extremely limited memory offered little competition for the large, 32-bit workstations that then dominated the CADD market.

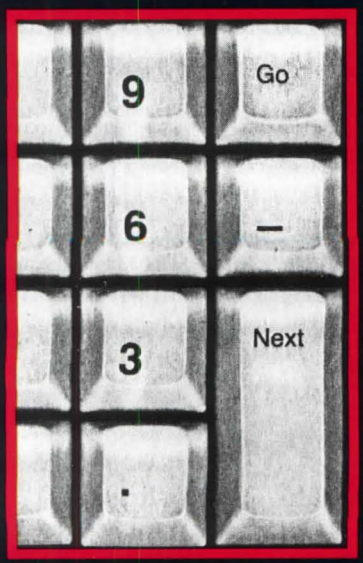
Improvements in microcomputer hardware began to change that equation by 1984, when Apple came out with the Macintosh, and IBM with the PC and PC/XT. Those 16-bit machines were considerably faster and had significantly more memory than their predecessors. Also, the number of companies writing CADD software had begun to increase, and companies already in that market had begun to experience exponential growth. Meanwhile, demand for the larger CADD workstations had begun to slow even as their price dropped.

By 1987, the competitive situation had almost reversed itself. Microcomputers, now at 32 bits, could approach the larger systems in processing speed and, when linked together into a network, in memory. Most telling was the number of manufacturers of large workstations that began to come out with microcomputer systems of their own. Some industry analysts were even predicting the total eclipse of the large systems by the microcomputer.

That has yet to happen and may never. But there has been a blurring of the two types of CADD systems, with their handling of data remaining perhaps the major distinction. The larger systems can still store more data in a single database, provide faster access to it, and allow more people to work with the data simultaneously. In the design or management of large, complicated facilities, that ready access to a single large database can be a plus.

With microcomputers, large amounts of data have to be broken down into separate files because of the machines' smaller memory and slower processing speeds when dealing with a lot of data. That not only demands "creative file management," as computer consultant Eric Teicholz puts it, but limits the number of people who can have access to or who can work on a given file.

Despite such shortcomings, ever-increasing numbers of architects are using microcomputer CADD. Reasons for that include the flexibility of the machines, which are usable for word processing and spread-sheet analyses as well as for drawing; their simplicity, requiring relatively little training time; and, of course, their cost, under $10,000 for most systems. As it becomes easier to link microcomputers together and to transfer files from one machine to another, even the current drawbacks of limited file size and processing speed should become less of a problem.



The production of working drawings and the creation of three dimensional views for design studies and presentations remain the most common use of microcomputer CADD among architects. Such uses have had their share of critics, particularly in the academic community, who have argued that to save the most expensive labor in an office, that of the partners, and to take full advantage of the microcomputer's power, software development should focus on design rather than drafting and presentation applications. That may be true, but it overlooks the fact that the most labor-intensive and routine activities—in this case, production and presentation work—are usually the first to be replaced by any new technology. Less than a decade old, microcomputer CADD is still at that labor-saving stage.

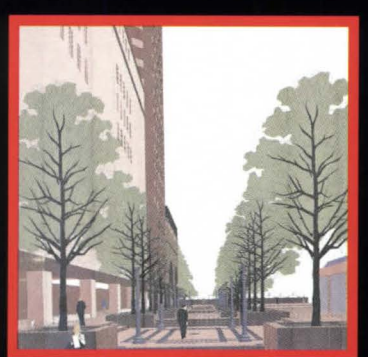
But almost as quickly as the microcomputer has moved into that role, it has begun to move beyond it. The following examples show how firms, in the course of using microcomputer CADD, are pushing its limits. They are finding more efficient ways of handling large amounts of data, using paint programs to create more realistic presentations, developing CAD/CAM techniques to make more detailed models, and employing perspective programs to study larger numbers of alternatives. Firms also are using copy commands to produce more precise working drawings, and three-dimensional views to explain complicated construction details more thoroughly. Such applications are certainly not all that these machines are capable of, but they are all creative responses to the technology—evolutionary steps in the maturing of the microcomputer. *Thomas Fisher, Vernon Mays* ■

See Technics-Related Products, page 132.



Better Reproduction

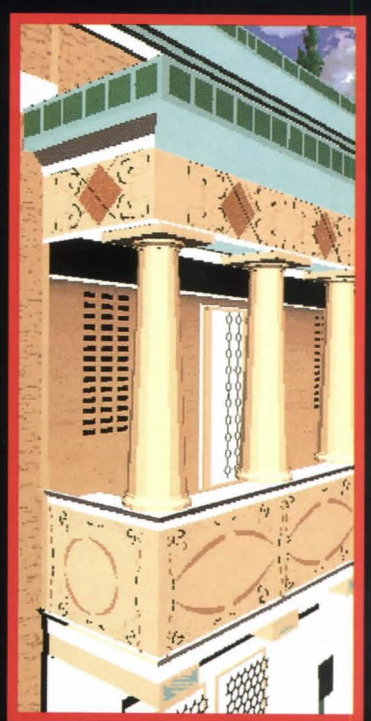
"There is always a problem transferring an image from a high resolution computer screen to solid media" such as paper or film, says Douglas Stoker of the Chicago office of Skidmore, Owings & Merrill. One method that SOM uses to get higher resolution images on paper involves the use of an electrostatic plotter to make what are essentially four-color separations. The plotter has a drum over which cut sheets of vellum or mylar are placed. A print head moves across the cut sheet as the drum rotates. The plotter creates a dot screen of each layer of the image, printing one color at a time, so that four passes through the machine are required to get a four-color image. This technique, says Stoker, "is reasonably fast and the transparent colors are wonderful; it's like having a giant zip-a-tone machine in the office. We use it to study designs as well as to make presentations." The drawings shown here indicate some of the uses to which the plotter has been put, from creating three-dimensional solid images (above), to generating renderings of landscapes in various seasons (right).

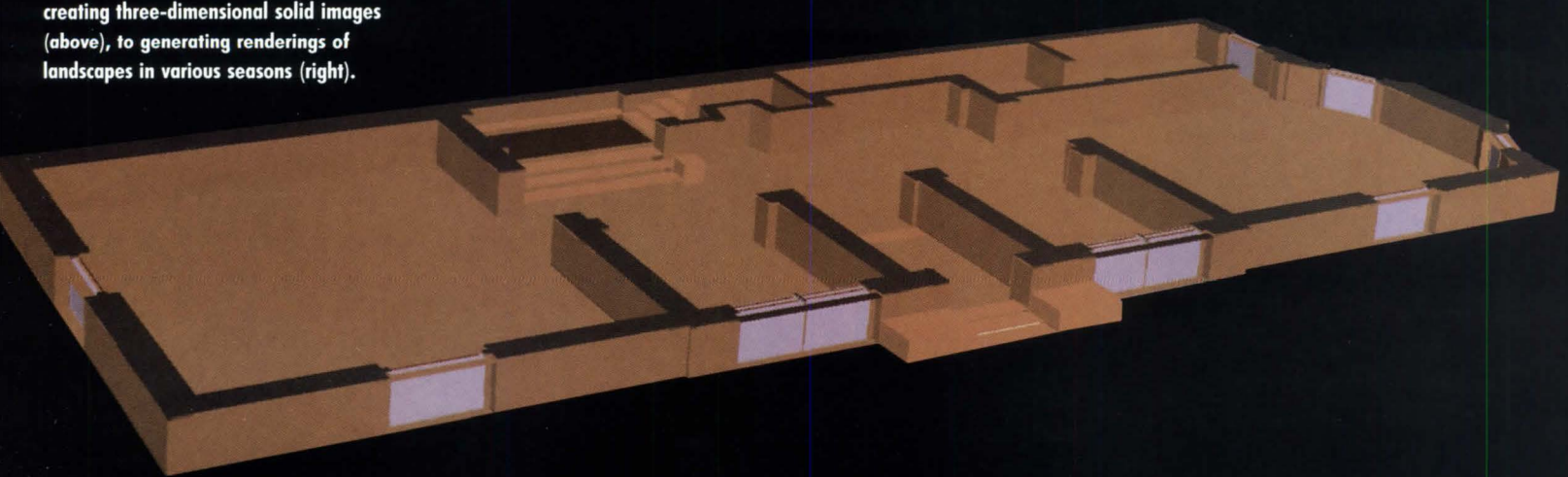


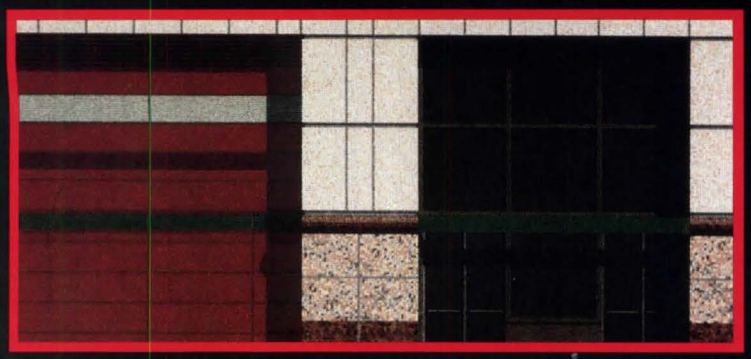


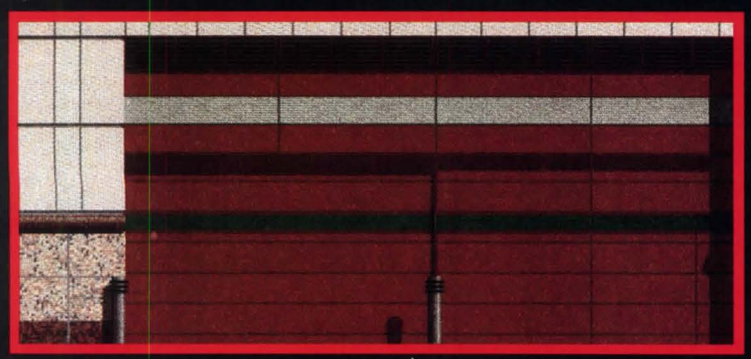
Another reproduction method being used by the Chicago office of Skidmore, Owings & Merrill uses microcomputer-based rendering software developed for the advertising industry. "We could have written software in-house," notes Stoker, "but the standard rendering programs were excellent, so we adapted it to our needs." This method is an ingenious solution to the problems of reproducing computer images off of a screen; it bypasses the screen altogether. Each image is separated into four colors within the computer and tapes are sent to the printing house, where the images are tranferred directly to film through the use of electronic scanning equipment. Press plates are then made and printed. These images of the Charnley House (right and below) were created through the combination of SOM's computer modeling system and rendering software. Textures were further enhanced through the use of painting software. The images were then transferred to film at a 150 line screen and printed. The result, says Stoker, is "a high resolution image that, unlike other reproduction methods, is not affected by changes in scale."

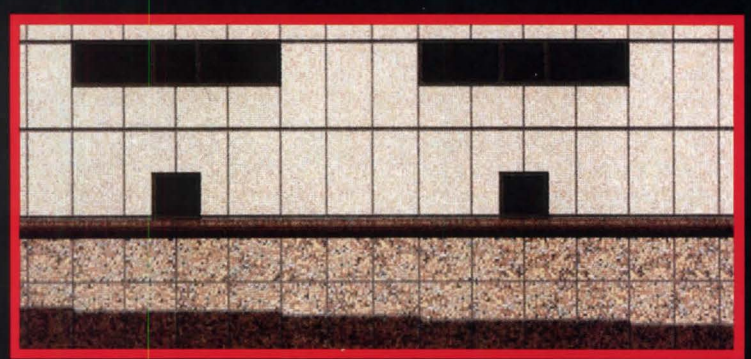


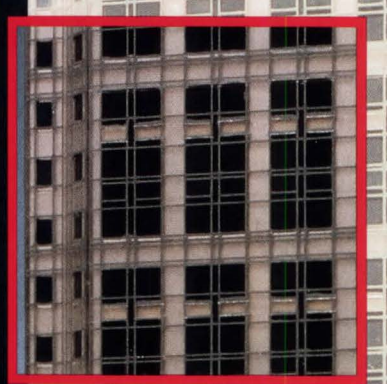






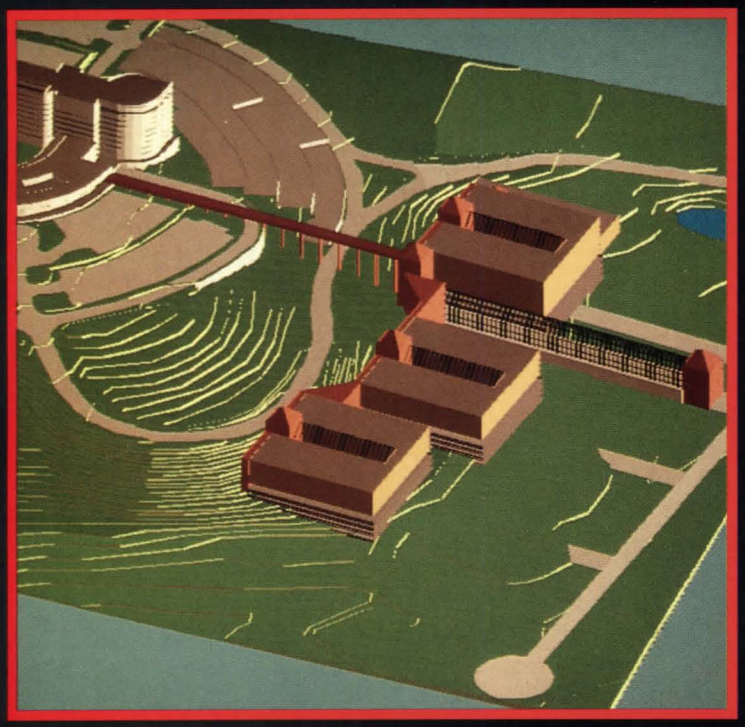






The Evolving Façade

Ian Ferguson likens the properly outfitted computer to "having a big box of colored pencils, where you can pick up any of the colors and draw with them." The seemingly endless stream of color possibilities (4,096, to be exact) provides the incentive to do exhaustive façade studies in the course of developing new projects at Davis, Brody & Associates, New York. Examples of quick design studies (three shown above) for the face of a mixed-use-high rise illustrate the program's ability to render accurately a variety of materials and finishes. Colors for the two shades of granite illustrated here were generated with a video-digitizing program that electronically codes visual data received from a closed-circuit TV camera aimed at a piece of stone. Using a color thermal transfer printer, small parts of façades can be produced and then mounted to form a drawing that is limited in size only by the user's ambition. Davis, Brody has produced such a composite six feet tall. Ferguson says the computer is well-suited to the gradual evolution of a façade, partly because it allows easy manipulation and deformation of the main design elements, once the labor-intensive stage of creating those elements is complete. After a window is constructed, for example, it can be stretched, shortened, subdivided, or multiplied with ease. While the option of low-resolution imagery allows for speedier work in the initial stages, the availability of high-resolution printing makes the technique appropriate for presentation drawings, as well. At Eli Attia Architects, also in New York, microcomputers generate layered drawings that can be quickly separated into groupings of elements (such as window configurations or spandrels), photographically reduced, and used as mechanicals to create photo-silkscreen stencils. An outside contractor actually prints the images on clear plastic. Some areas are sandblasted to vary texture. And, by printing on both front and back of the plastic, depth is added to the final presentation model (example, right).

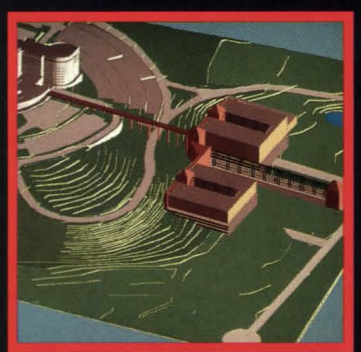


complexity of data a small system can accommodate. Conversion to administrative offices of the installation at Fort Tompkins in Staten Island, N.J., prompted the generation of a bird's eye view and courtyard perspective (right) to help the client (in this case, representatives of the U.S. Navy) visualize the project. Hans-Christian Lischewski, the firm's director of CADD services, says while the surface-shaded views illustrated here relied on a mini-computer to process and output data generated on micros, the same functions can be performed now on currently available microcomputers. "Our system is four years old, and in the computer industry that is very old," he says. Lischewski praises the computer's capacity to allow three-dimensional viewing of many variations on a scheme. "You are more flexible with the computer than with cardboard and glue," he says.



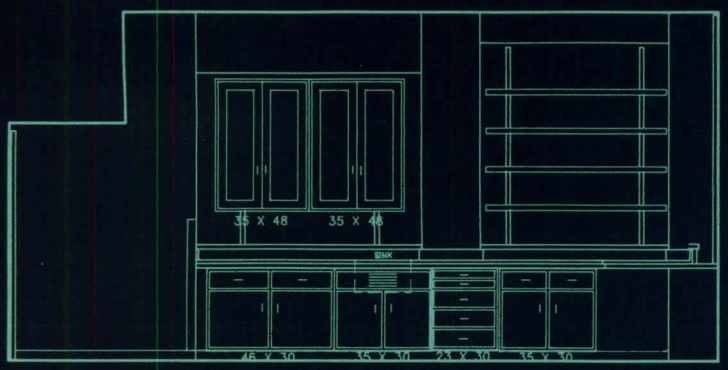
Planning Studies

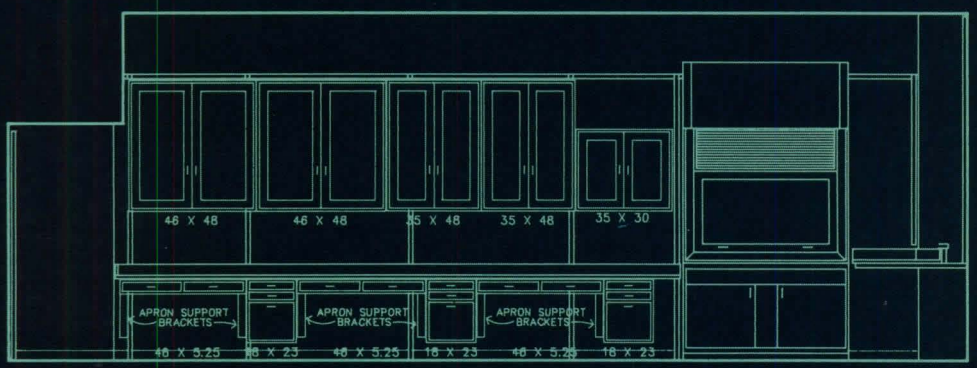
The design problem faced at Russo + Sonder Architects, New York, was a familiar one: A large institution on an expansive site wished to plan its inevitable growth over a ten-year period. The question was: which direction to grow? Armed with the knowledge of needed square footage and logical increments of expansion, the firm conducted a series of exercises with microcomputers, studying possible locations and general massing of a phased building program. The final recommendation for the University of Connecticut Health Center (above) consisted of a stage-by-stage expansion onto a relatively flat site beside the hospital (a steep site had been studied too). When it came time to confer with the client, these slides replaced the customary site model. Views of another Russo + Sonder project illustrate the

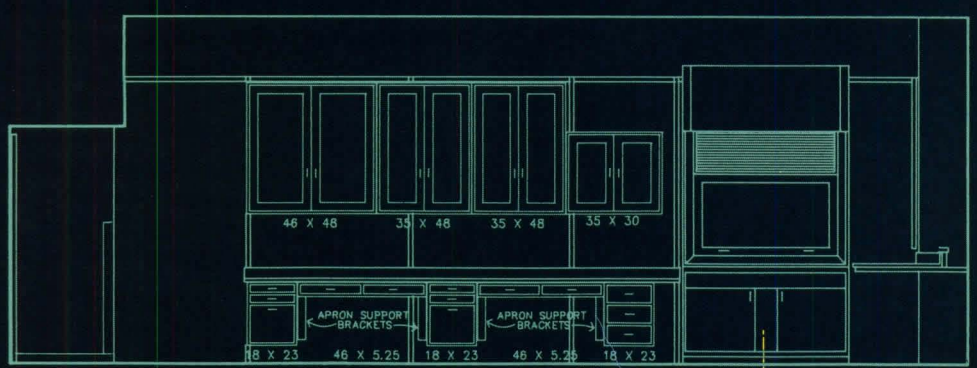


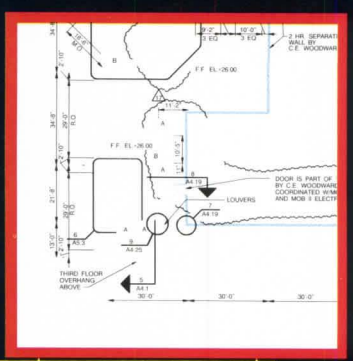


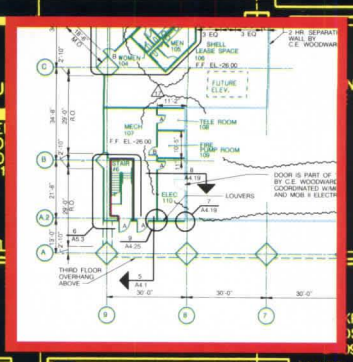


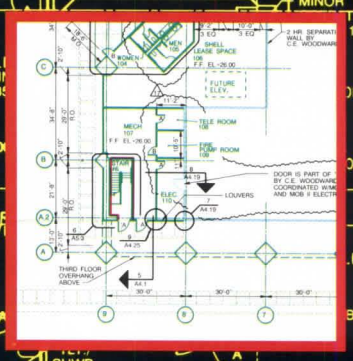










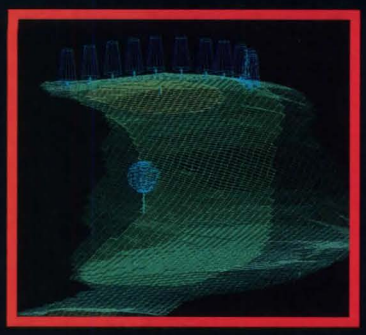


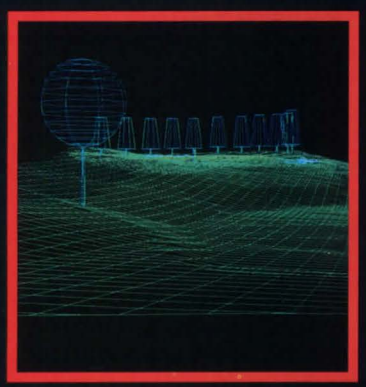
Clearer Drawings

The reduction in the amount of repetitive drawing through the use of symbol and detail libraries is one clear advantage of microcomputer CADD. "Rather than spend a vast amount of time developing a library of standard detailing," says architect Dan Griffin of The Horrell Group in Memphis, "we have let each project stand on its own in detail development, but, upon completion, extract details that merit inclusion in a standard library." Once developed, the library of details also enables firms to do drawings in ways that might not have been feasible before. To aid the users of the pathology building at the University of Tennessee, Memphis, who were having trouble reading the standard architectural drawings, the Horrell Group used the symbol library to full effect by drawing wall elevations of every lab (above). Such drawings would almost certainly have been prohibitive if manually done. The drawings also ensured the satisfaction of the building's users by letting them see exactly what they would have in their labs and by letting the architects respond quickly to requested changes.

Microcomputers and new printing technology are not only changing the content of working drawings, but changing the way in which construction information is presented. Gresham, Smith & Partners of Nashville, Tennessee, use the layering of information in their CADD system as the basis for color offset construction documents. "We find that this method costs less when producing more than about 40 or 50 sets of drawings," say Paul Dougherty of Gresham, Smith, "and it helps clients understand buildings. It also aids estimators and bidders." As the drawings show (right), there are four basic colors, although they can be mixed to create many more. The firm sends tapes or, when using microcomputers, floppy discs to Lellyett & Rogers, a Nashville company that has a large-format laser plotter that tranfers the drawings on the discs directly to film. The plotter also typesets all text on the drawings, "which saves drawing time and computer memory," says Dougherty. The developed film is then used either as an intermediate step in the production of a photo copy or as the basis for printing drawings in larger sizes.

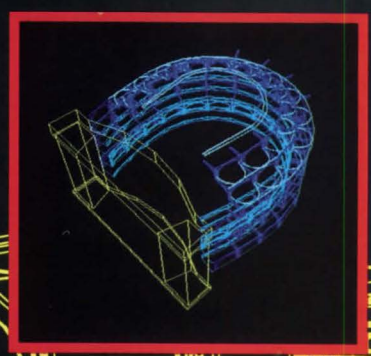




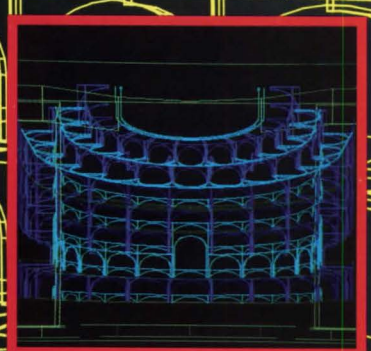




Sometimes the computer software developed for other purposes can have applications as a design tool. Landscape architects Donovan, Feola, Balderson & Associates and computer consultant Brad Holtz, of Bethesda, Maryland, adapted civil engineering software for use in the redesign of a golf course (left). For one fairway, whose flag was not visible from the tee, they digitized 200 points along its length to simulate its contours and then overlaid the fairway with a six-foot grid that could be manipulated to alter the height of the green and the hill that obscured it from view. The sequence of views on the computer screen was then photographed, and the photographs converted into a videotape that the firm has used to sell its services to others.



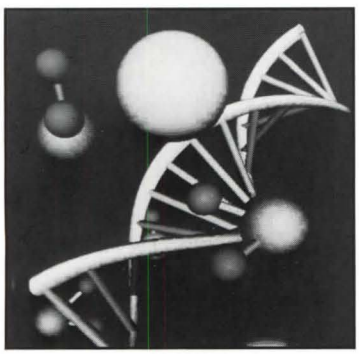




New Design Tool

As the microcomputer has become more powerful, its application as an expert system has also become a reality. Architect Michael McKee of Moshe Safdie & Associates in Boston developed several routines or macros that served as an expert system for the firm in its design for the Toronto Ballet Opera House competition (right). McKee researched the arithmetic formulas for theater sightlines, acoustics, and seating layouts and found that there were certain variables and other constants, which became the basis for the macros that he wrote. "One macro," says McKee, "queried us for the variables: stage height, row to row dimension, the location of the arrival point of sight at the stage, and the required head clearances. It then calculated the optimum floor slope and the distance and height of each row." Another seating macro "measured the arc length along any row and determined how many and what size seats will complete the row while aligning the ends to form the desired aisle width." The microcomputer then automatically generated drawings, in both two and three dimensions, of various auditorium designs. "These drawings," continues McKee, "not only aided us in evaluating alternative schemes, but provided drawings for presentation and model building purposes." The computer also enabled the architects "to compare the acoustic performance of each scheme by tracking the various wall surface areas, their orientation, material, and acoustics."

Technics-Related Products



ColorVueSE™, a color video interface card, allows users of the Apple Macintosh SE to display and print in color from their application programs. When installed with a standard color monitor (an Apple Color RGB, an IBM, or a compatible VGA monitor), ColorVue displays up to 16 colors from a palette of 4096 on a monitor that is approximately 75 percent larger than Macintosh's built-in 9-inch SE screen. The image can be displayed on both the SE and larger monitor, and can be printed in color on any of a number of printers. Orchid Technology.

Circle 127 on reader service card



DREAMS, a new generation of CAD software for the Apple R Macintosh family of computers, offers powerful features without sacrificing ease of use in order to encourage innovation. It offers full Macintosh II color support, extensive use of layers, keyboard entry, zoom up to 32X, advanced text handling, and PostScript R compatibility. The basic software includes a drafting palette of tools for creating text, lines, and shapes; accessory palette of tools for zooming, rotating, and extending; and a dimension palette. Three optional architectural symbol libraries are to be available as well. Innovative Data Design.

Circle 128 on reader service card

The MicroDesign 386 microcomputer, running at 20MHz, incorporates state-of-the art hardware technology with a wide availability of microcomputer software. It offers large data storage, multitasking, and fast processing capabilities. Applied CADD Systems, Inc.

Circle 129 on reader service card



CADVANCE 2.0 is a major update to the PC-CAD software package offered by ISICAD (formerly CalComp). The new version increases the data base structure to 32 bits, up from 16. It offers speed increases of 300 percent. It provides a direct link to dBASE III Plus data files. And it offers improved compatibility with ISICAD's high-end CAD systems. ISICAD.

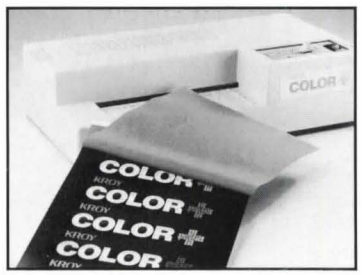
Circle 130 on reader service card

The Pepper Pro1280 TM is a 32-bit, intelligent high-resolution graphics system for the IBM AT and RT. It converts a PC to a 6 MIPS graphics workstation, increasing the PC's speed, resolution, and number of colors. Number Nine Computer Corporation.

Circle 131 on reader service card

Designer, a full-color technical illustration and graphic art program based on the microcomputer, incorporates scanned image support. Bitmap images from scanners can be imported, merged, saved, traced over, stretched, colored, and zoomed. Other features include polygon and curve editing; polygonal pathing; smoothing and unsmoothing curves and polylines; extensive drawing primitives; a variety of line widths and styles; rotation of text and graphics; flexible labeling and text editing; user-definable colors and overlays; automatic associative dimensioning; and more. Micrografx, Inc.

Circle 132 on reader service card



The Kroy Color Plus system adds color to documents created on laser printers. The user takes the laser-printed page, sandwiches it with a color transfer sheet, and passes the sandwich through the processor, thereby bonding the color to the toner image. Kroy Inc.

Circle 133 on reader service card



CADKEY 1, a personal computer version of CADKEY 3, comes complete with construction geometry, detailed dimensionings, drawing aids, and editing commands. Users can upgrade and transfer parts to CADKEY 3, taking advantage of links to other third-party programs. CADKEY 1 is non-copy protected. CADKEY.

Circle 134 on reader service card

SnapShot is an electronic photography program based on the PC. Images that are captured from an RS-170 video source (video camera, VCR, and still video camera) can be edited and enhanced on the computer. The user can sharpen, outline, paint, or airbrush the image using a variable-size paintbrush, or can create special effects by mirroring images and converting images to line drawings. Edited images can be placed in a page makeup program and printed on a laser printer or imagesetter. Aldus Corporation.

Circle 135 on reader service card

The AMS Time Machine, a microcomputer-based scheduling system, produces Network Logic Diagrams with plotting based on early, late, or target dates; bar charts; and printouts of ongoing jobs. While most systems use one calendar, this one offers up to 10 calendars. Diversified Information Services, Inc.

Circle 136 on reader service card

The Personal Architect Version 2.1 increases the capability and reduces the price of the earlier PC-based CAD/CAM system. Version 2.1 features on-screen icon menus for both the Advanced Architectural Drafting and the Architectural Design modules. In the Architectural Design module, volumes and components can now be inserted while in a perspective view. Version 2.1 provides compatibility with microCADDS Surfaces, a 3-D design package with advanced surfacing and shading capabilities, and compatibility with an expanded range of PC hardware. Computervision Corporation.

Circle 137 on reader service card

ARRIS CAD/CAM software ARRIS is now available for use with the SCO XENIX 386 operating system, improving its performance on 80386 PCs: Its speed is now tripled, as compared to its performance under a 286-based operating system. ARRIS also takes advantage of the multitasking, multiuser environment for which SCO XENIX 386 was designed. Sigma Design, Inc.

Circle 138 on reader service card

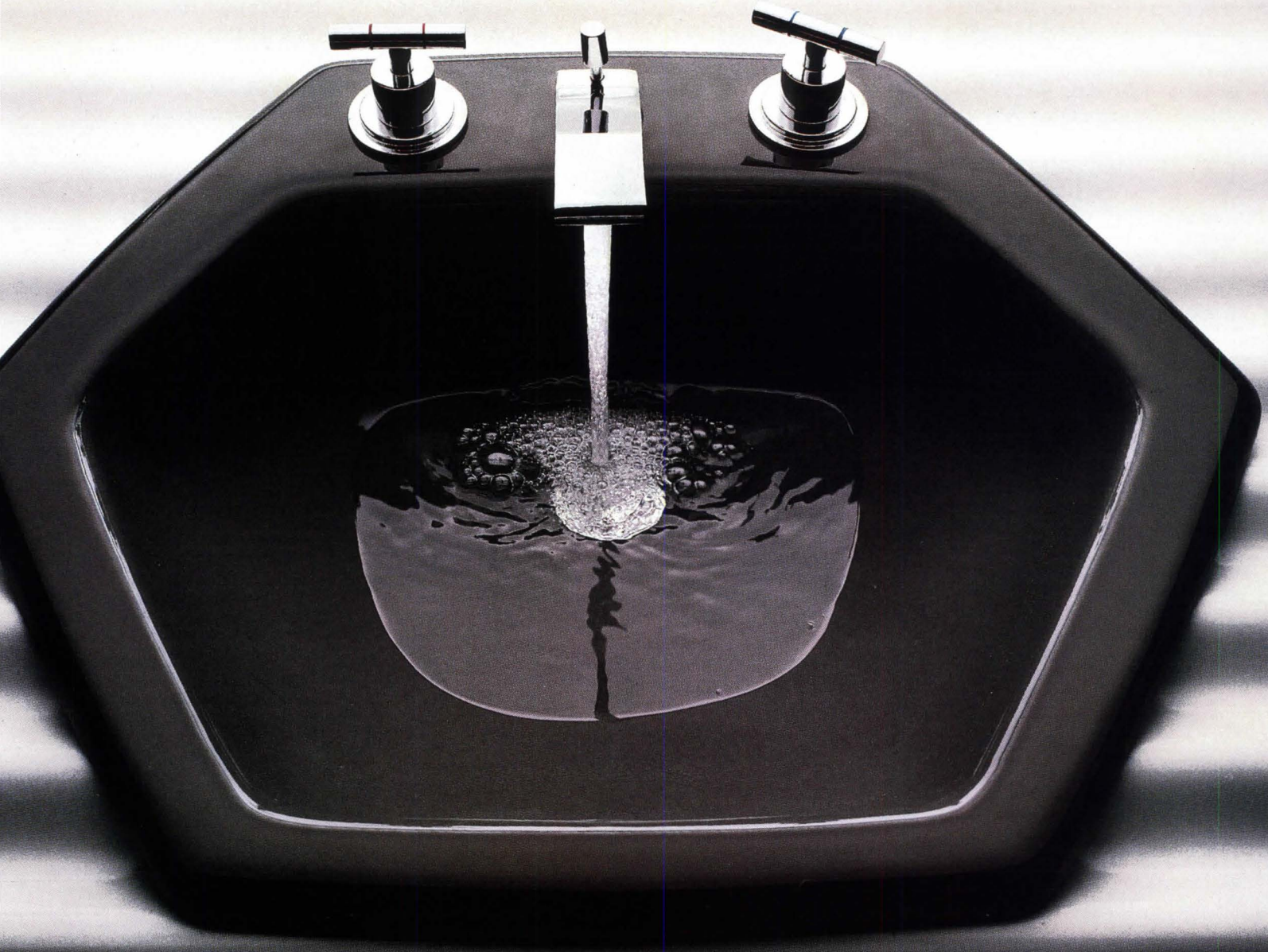
(continued on page 134)

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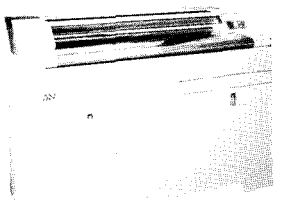
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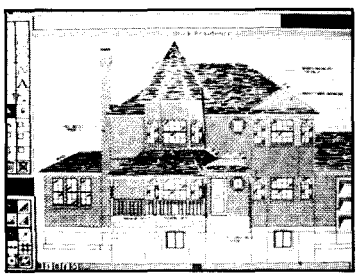
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(continued from page 132)



The EAGLE 1650 and EAGLE 1680 are two relatively low-cost, state-of-the-art document scanners. Both feature a continuous-feed roller permitting documents, from one to 17 inches wide (C-size) by roll length, to be scanned. Both can be upgraded to D- or E-size sheets. Both have dynamic and interactive threshholding for automatic or operator-controlled adjustment of contrast. Standard operating platforms include Sun 3, Apollo Domain, IBM PC/AT, or DEC workstations. Data is converted to industry standard raster or vector formats. ANA Tech Corp.
Circle 139 on reader service card



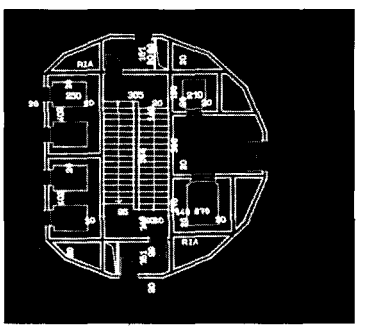
VersaCAD/Macintosh Version 1.0 is a two-dimensional CAD system for the full line of Apple Macintosh personal computers. The new version implements the Macintosh user interface, supporting screen icons and pull-down menus for ease of learning. It is a fully interactive system that provides a variety of drawing objects and attributes, floating point accuracy to 16 decimal digits, and extensive visual symbol libraries. It provides full editing and grouping capabilities, 250 drawing levels, pan and zoom, cut and paste, and numerous other features. VersaCAD Corporation.
Circle 140 on reader service card

Primavera Project Planner R 3.0, project management software for scheduling and resource and cost control, features a new database foundation that enables users to add alphanumeric activity identifiers, view on-screen predecessors, and control resources. A new 12-page brochure explains the program's features. Primavera.
Circle 141 on reader service card

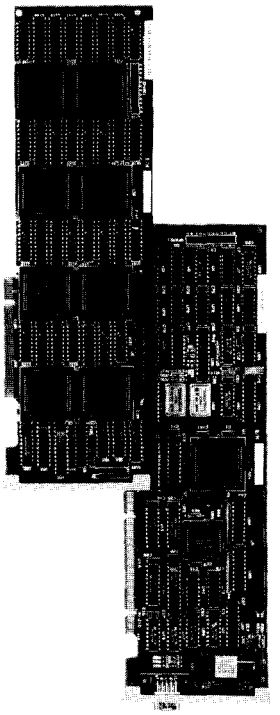
SuperSpec, an electronic specification writing system, uses checklists for data entry. Once the specifier completes a checklist for each section, SuperSpec produces the spec in one of two ways. Either the checklist is mailed to Corbel's Technical Center, where it is processed, and the specifications are generated on laser printers, or the checklists are transmitted to Corbel's host computer, which creates the specifications that are transmitted back by phone line and printed on the user's PC. Corbel & Co.
Circle 142 on reader service card



The PT250 terminal is a low-cost, full-function terminal optimized for use with 50 Series superminicomputers and the PRIME EXL 316 supermicro. Connected to 50 Series computers, the new terminal improves system performance by providing both block and character modes. With the PRIME EXL 316, the terminal improves performance of Merge 386 software to allow concurrent running of the MS-DOS and UNIX operating systems. Prime Computer, Inc.
Circle 143 on reader service card



PC BAT, a building design program developed in France, allows users—even those with no computer experience—to draw their sketches freehand, and then corrects their errors and adds dimensioning. The user draws on a digitizing table using a light pen, thereby entering the drawing into an IBM-compatible computer. Two- and three-dimensional versions are available. BATISOFT.
Circle 144 on reader service card



The Galaxy GS-1280 and GS-800 graphics controllers allow users of popular PC CAD packages to redraw and regenerate complex drawings instantly. MagniLens, a special software utility, provides zoom windows allowing CAD users to zoom in on fine line drawings and dimensional notations while retaining high resolution for accurate and fast editing. Using dual Intel 82786 graphics processors, the GS cards "pipeline" graphics commands for increased speed. GalaGraph Ltd.
Circle 145 on reader service card

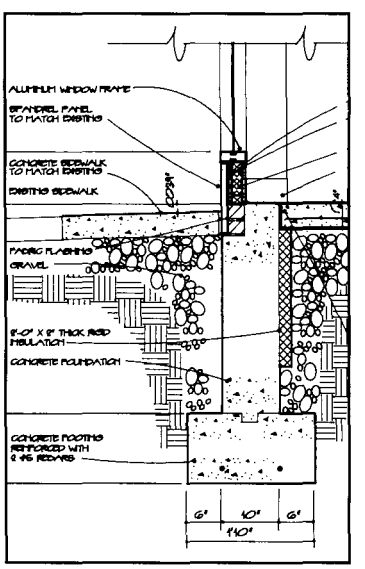
MicroStation is Intergraph's entry-level PC drafting and design product that runs under DOS on 80386-based computers, IBM PS/2, PC XT/AT, and compatible computers. In addition to the DOS-based version, Intergraph offers a UNIX-based version, MicroStation 32. MicroStation has guaranteed upward compatibility with Intergraph's VAX and UNIX-based applications, allowing users to expand to the company's full range of application software. Intergraph.
Circle 146 on reader service card

The V-80, Spectrum, and Versacolor plotters offer output in A and B sizes. The first is a monochrome printer/plotter, the second an electrostatic plotter, and the third a thermal transfer color plotter. The plotters offer a complete range of interfaces and controllers. A brochure is available to help users select the narrow format printer appropriate to their needs. Versatec.
Circle 147 on reader service card

Profit CAD offers design and drafting capabilities with concurrent real-time estimating. The system operates on the personal computer. Construction Data Control.
Circle 148 on reader service card



DRAWBASE, a micro-based CAD package that integrates 2D and 3D drawing capability with database management, is suitable for multiple applications including architecture, facilities management, construction, and mechanical design. It comes complete with drawing and database software, interface capability, tablet menu, symbol library, reference manual, training tutorial, and installation guide. Programming functionality is also included. Skok Systems Incorporated.
Circle 149 on reader service card



GEOCAD, a design enhancement software package for AutoCAD, provides libraries of architectural design elements (doors, windows, landscape elements, people, special fonts, etc.) and pre-programmed procedures (layout of stairs, column grids, parking lots, etc.) especially suited to architectural design and drafting. It also includes a laminated tablet menu with the most commonly used Autocad commands. Geocad, Inc.
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(See P/A Technics, p. 126)

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Designing for Security

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Stuart L. Knoop, AIA Page 146

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Building security is now a concern at some level for most architects. Public concerns over security, particularly for public buildings, have reached unprecedented levels. Yet relatively few contemporary design examples have been published that reflect both good security practices and good architecture.

In this special supplement, P/A correspondent Thomas Vonier and two guest authors identify and discuss emerging areas of practice, research, and product development in regard to building security, focusing on case studies of planned and recently completed projects.

Security: The Next Stage

Architects have paid much attention recently to the issue of enhancing security for an expanding range of public and private facilities. Few professionals today argue with the view that heightened concerns over security are warranted.

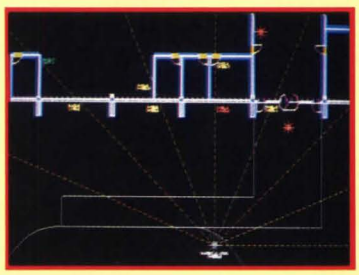
Security is particularly an issue for buildings that house the sensitive or vital operations of government agencies and multinational corporations, and for facilities that contain intrinsically valuable or dangerous materials and products. Increasingly, however, security is also a matter of vital importance for everyday buildings.

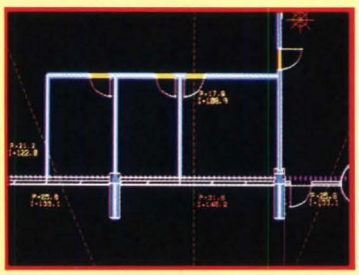
Searching for Examples

While there is no shortage of seminars and workshops on the general subject of building security, the profession remains hard pressed for good examples of completed or planned architectural solutions. In the search for better ways to accomplish security aims, architects and their clients seek examples of buildings and sites that provide enhanced protection within appropriate design vocabularies.

But the pursuit of attractive, technically sound examples often is frustrated by the very secrecy that surrounds physical security provisions. Understandably, many building owners or occupants do not want to publicize steps that may have been taken to thwart would-be thieves, spies, or terrorists: Maintaining the integrity of security features depends to some extent on safeguarding the knowledge about them.

In light of these constraints, *Progressive Architecture* has been fortunate to obtain permission from a variety of firms and their clients to publish information on the key security features of planned and recently completed buildings. A single, important principle unifies these diverse projects: The planning and architectural concepts have served as fundamental elements of the security system. The obverse is also true: Security issues have helped to guide and shape design. Considering security implications at every step along the way has been central to the process. In this context, electronic security devices and physical hardware items remain indispensable, but are secondary parts of the overall system.





If designed well, buildings themselves—their siting, functional plans, circulation schemes, access points, and details of construction—become primary security assets. If done poorly, they can become security liabilities for which no amount of hardware and gadgetry will compensate.

Not Just Bricks and Mortar

Highly developed design tools, too, are beginning to emerge in areas related to security. As has been the case in other areas of design (structural and energy systems, for example), engineers are providing architects with computer-based techniques for analysis and design.

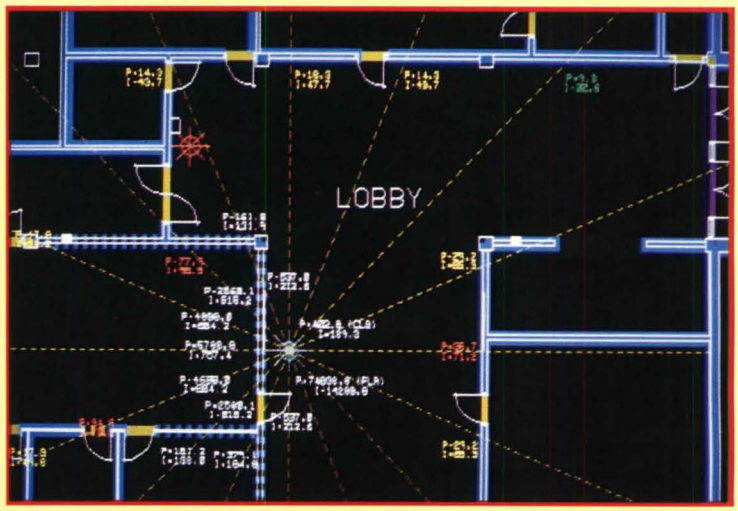
One such example, apparently unique, is BombCAD™, developed jointly by the Everett I. Brown Company and the Lorron Corporation to assess the possible effects of terrorist bombings on buildings and their components. In essence, BombCAD provides a graphic and numerical display of the ways in which the explosion of a bomb (for which the charge weight, explosive characteristics, and location can be quickly manipulated) would affect surrounding building components and occupants.

In demonstrations of the program, using a hypothetical building and site, BombCAD's developers are able to show a highly detailed diagram of bomb-induced overpressures and impulse loads at interior and exterior points of the building. The efficacy of new architectural and site elements—for example, placing an earth berm at the base of a building, or specifying stronger glazing and framing members for a lobby partition—can be assessed readily.

Much of the knowledge used to develop this software has been available in other places (for example, in nomographs and tables provided in various military design manuals and guidelines). And, as its authors readily acknowledge, BombCAD has limitations (one of which is that the program's estimates of human injury are based only on primary blast effects, while much empirical evidence suggests that an equal or greater number of fatalities and serious injuries may result from secondary and tertiary effects, such as flying debris or subsequent building collapse). Still, there is no denying that the software integrates existing knowledge and gives it new applications.

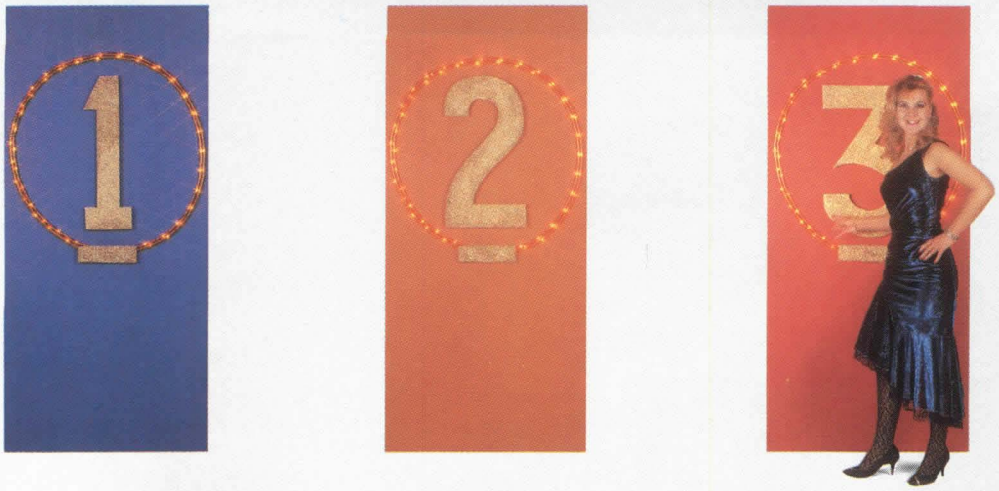
As security concerns continue to grow in priority among the traditional clients for design services, we can expect more design tools of this variety to emerge. ***Thomas Vonier, AIA*** ■

The author is an architect in Washington, D.C., and serves as correspondent there for P/A. He is editor-in-charge for this special security supplement.



In a demonstration of BombCAD analysis, a car bomb (top, shown as a white star) explodes outside a building lobby. The program sets shock impulse loads and overpressures (figures in yellow and red) on key parts of the building exterior. BombCAD also can estimate interior blast loads and overpressures. Red stars indicate locations of other potential bombs, whose characteristics and effects can be modeled separately. A second example (above) illustrates one of many possible scenarios involving the placement of a so-called briefcase bomb. The program's flexibility allows examination of many possible bomb locations and charge weights.

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Architectural Access Control



Fortified towns, such as Mont-Saint-Michel, employed means of access control that are germane today. Such places established a predetermined, easily surveyed approach path; used natural features to restrict access; created several layers of defense, with checkpoints at which visitors were scrutinized before being admitted; and conveyed an image of impregnability.

Access control is the term generally used in physical security planning for admitting or denying entry and for screening. The most rudimentary, and most ancient, form of access control is an enclosing wall with a door or gate and some sort of locking device.

History furnishes many variations on this basic example, such as the familiar moat, drawbridge, portcullis, and massive crenellated walls surrounding a castle. Natural barriers—mountains, rivers, lakes (as at the Aztec city of Tenachtitlan), and tidal waters (as at Mont-Saint-Michel)—often have been exploited as the outer, most formidable line of defense and control.

Architects responding to the need for protection have raised the design of walls, doors, windows, bridges, hardware, and other access control elements to the level of high art. It remains our problem today to design artfully with such unattractive, or at least intrusive, security devices as walk-through metal detectors.

Today electric locks, card-key systems, and metal detectors, as well as voice, hand geometry, and other personal characteristic identifiers, supplement the traditional architectural access barriers. Still, the objective of protecting people and property from hostile outsiders encompasses these common functions:

- To discriminate between who, or what, may enter a building;
- To detect and intercept concealed weapons or other threatening devices; and
- To prevent unauthorized entry by using barriers, human force or, as a last resort, weapons.

Even building types not usually dominated by security considerations require access control. Some places of worship segregate the ordained from the laity and control who may enter where. Health care facilities, too, demand measures to control the flow of visitors, protect patients from infection or threat, and detect dangerous or prohibited items being smuggled to patients.

Every air traveler is aware of counter-terrorist access control measures, including the ubiquitous walk-through metal detectors and parcel or baggage x-ray machines. But design for access control must consist of more than barriers, screening devices, and identification badges. It also involves siting, building configuration, and other basic architectural considerations.

Ideally, access control objectives should be set at the functional programming stage, taking into account these questions:

What are the threats against which access control is to defend? Among the possibilities are theft, espionage, property damage or sabotage, and harm to targeted persons.

Who poses the threat? Potential adversaries include criminals, political extremists, disgruntled or deranged employees, professionally trained attackers and, in some cases, the general public.

What means might be used to gain access? Tools, vehicles, weapons, and explosives must be considered.

What or who are the security measures intended to protect? In many cases, protection objectives will include valuable property, classified information or proprietary processes, and public figures.

Who will administer and enforce security systems, including access control, in a confrontational situation? The alternatives may include internal security professionals, outside contract guard forces alerted by electronic or remote sensing devices, and public law enforcement agencies.

To what extent must the facility itself serve to prevent unauthorized access? Can retaliatory or even life-threatening measures be used, or must protection depend solely on resistance by physical barriers and other measures?

How visible should security measures, including access controls, be? Highly visible measures may deter would-be intruders, but also may conflict with desired architectural images; for example, a bank might wish to stress security, while a legislative body may not.

What priority does access control have in the construction and operating budgets? The designer must determine whether the required safeguards are simply a matter of special locks and "authorized personnel only" signs, or if the program and its priorities suggest much stronger measures.

Having established security objectives, what design options are available to architects? A full range of design and security concerns can come into play:

Access control location. In a highly sensitive facility, there will be one and probably several points where everyone entering or leaving—*employee and visitor alike*—must be identified and screened. Manufacturing facilities may require high-volume screening areas for employees and separate, lower-volume areas for reception, screening, and holding of visitors. In many situations, shipping and receiving points will have their own access controls for people, vehicles, and freight.

Screening should ideally take place at or near the perimeter of the site, remote enough from buildings to protect potential targets from harm by explosives detonated in the screening area itself.

Many facilities dictate compartmentalization, with public access allowed only to appropriate, designated areas. Employees, too, may be restricted from certain areas not related to their jobs, such as computer rooms and sterile environments.

Overall building organization can support or frustrate the flow of segregated employee and visitor traffic. A central screening area can serve as a gateway to a campus of satellite buildings that house compartmented functions. This approach may have an adverse impact on future flexibility or expansion, should some compartments merge or be further divided. To achieve the same objectives, coded card-reader systems can admit appropriate staff to certain areas, while visitors can be admitted only under escort of authorized personnel.

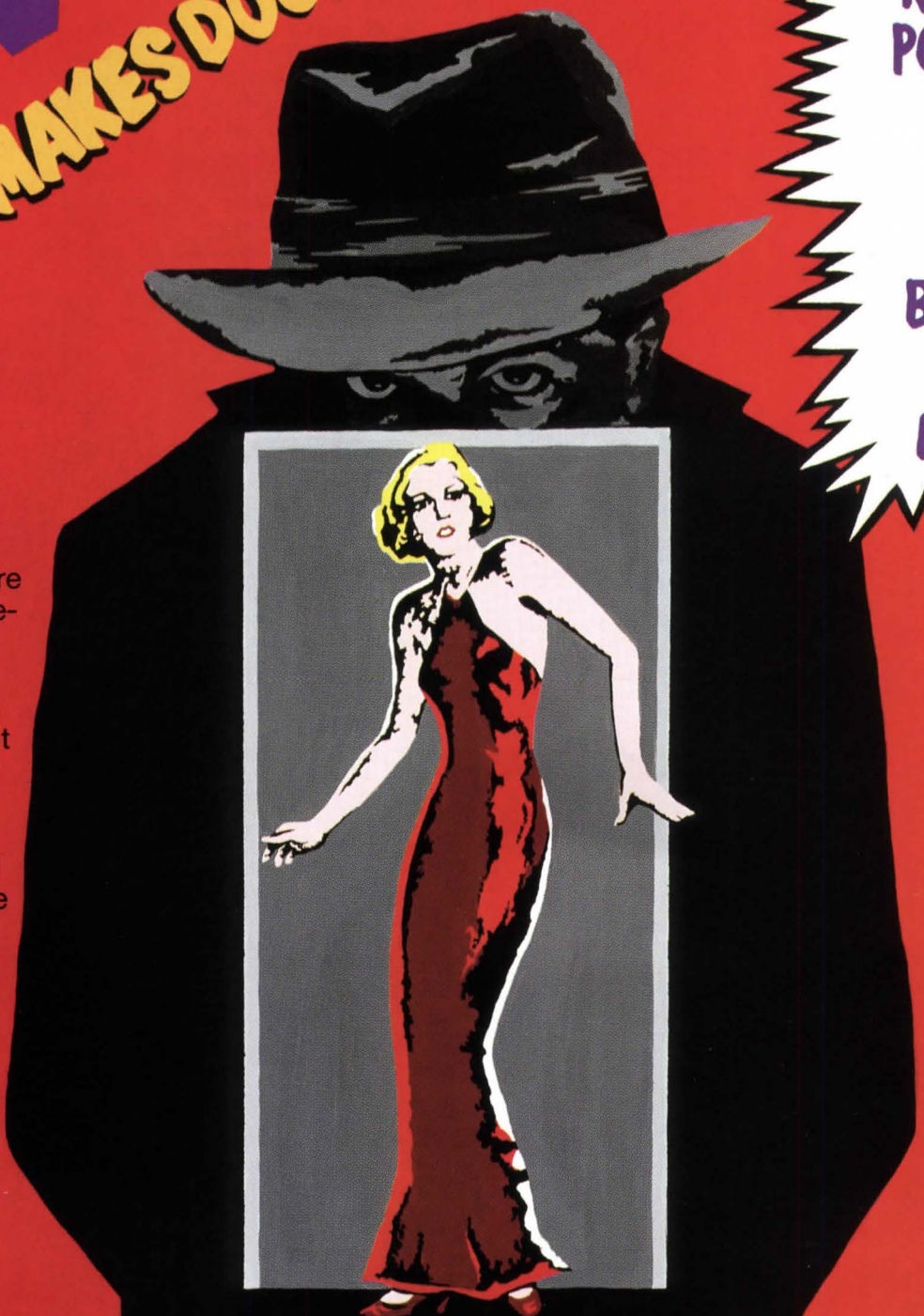
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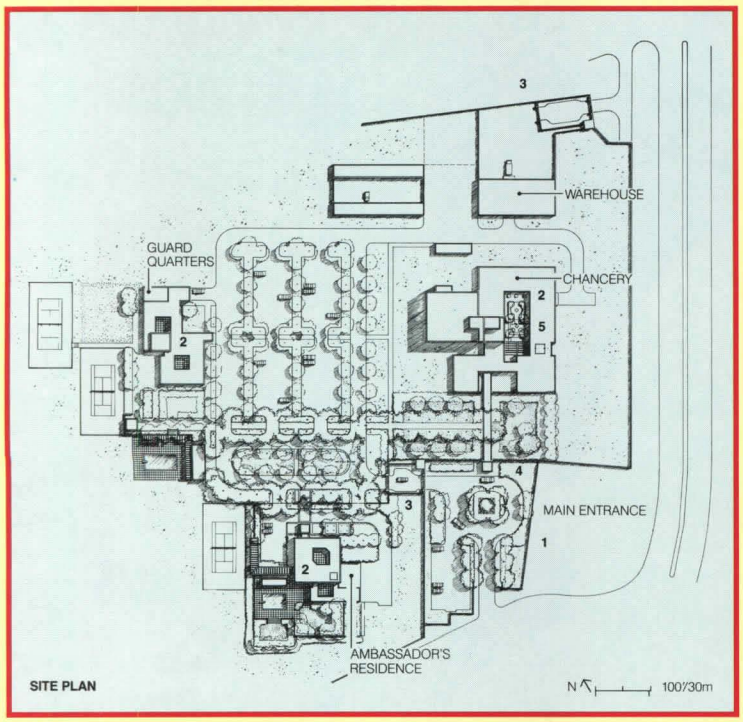
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Circle No. 396



The site plan for a proposed U.S. embassy in the Middle East, designed by Oudens & Knoop Architects of Washington, D.C., shows inherent security features, including: (1) an entry forecourt outside the perimeter wall, located off the main thoroughfare and designed to slow vehicle approach; (2) setbacks from the site perimeter for principal buildings, with each surrounded by a wide buffer; (3) a protected sally-port for screening all incoming vehicles; (4) a point near the site perimeter for screening pedestrians; and (5) a chancery building subdivided to separate highly sensitive or critical functions from the public.

(continued from page 146)

Building configuration. Not surprisingly, the easiest forms to protect are those that have simple geometry with unconvoluted exteriors. The more complex the building form, the more difficult surveillance becomes. Likewise, the more articulated the surface, the greater the risk of surreptitious entry. If access to the building face is effectively prevented by site perimeter control measures, these considerations may be less worrisome.

Openings. Fixed, opaque surfaces can be constructed to withstand almost any attempt at penetration; doors and windows are obviously the weakest elements, requiring special protective measures. Fewer openings permit fewer and simpler security and access control measures. But even buildings that lend themselves to windowless exteriors—museums, factories, libraries, and theaters, for example—must have fire exits, louvers, loading platforms, and other openings that usually are not considered architectural features. Often these are overlooked in access control design. Frequently placed intentionally to be inconspicuous, they present especially attractive and vulnerable targets to intruders.

Treatment of openings depends on anticipated threats. Nearly all types of doors, windows, and louvers are available to resist specific ballistic, forced-entry, or blast attacks. Given time and tools, however, most of these products can eventually be breached by a trained or practiced expert. Thus, selections should be based on the anticipated levels of threat and the acceptable amount of time before failure occurs.

Protection against mob violence. For sensitive facilities located in hostile overseas environments, access denial may not be a matter of active resistance; instead, the objective may be to detect entry attempts and delay them long enough to permit local authorities to take action. Imagine a facility occupied by a U.S. defense contractor in a politically volatile part of the world (say, Teheran after the fall of the Shah), or even in a NATO country where the U.S. presence is unpopular. Potential threats, especially for violent mob actions, may be enormous, but the possible defensive responses are extremely limited.

Guard forces in such facilities can rarely mount more than a token defense, legally or otherwise. If a host country's law enforcement is ineffective or uncooperative, there is little recourse against the actions of a mob except to seek refuge or to evacuate. Many facilities provide a "safe-haven"—a well-protected, self-contained refuge where occupants can hold out until rescued or until hostilities cease. Where possible, covert escape routes should lead to off-site areas that are less apt to draw the attackers' attentions.

Where mob violence is a clear threat, it may buy time and divert hostile energies to place such spaces as commissaries (with their attractive and relatively less valuable inventories) near the likely place of attack. The vehemence of an assault may be largely dissipated before more substantive and valuable targets are reached.

(continued on page 150)

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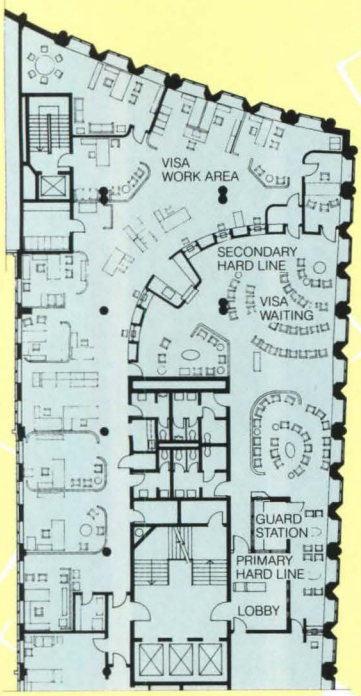


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Requirements for U.S. embassy consular offices in Vienna demanded that visitors be screened by Marine guards posted at the entry. The office space is segregated from the lobby by a "primary hard line" designed to resist forced entry (by using electronically-controlled doors, for example) and ballistic weapons. Staff is further separated from public areas by partitions and teller windows forming a "secondary hard line" of somewhat lesser resistance. Access to fire stairs is through ballistic-resistant security doors equipped with alarms. The design is by Oudens & Knoop Architects of Washington, D.C.

(continued from page 148)

Normally, however, situations are less extreme. Access control for unwelcome visitors typically means selecting products that will resist forced entry long enough to ensure detection by human or electronic surveillance, allowing prompt response by security personnel or by local law enforcement agencies.

Finally, most prevention of unauthorized entry depends on the strength of the primary physical barriers, including partitions and any openings in them. The combination of these elements, which together provide the separation and barrier between the outside world and the inside, is called the "hard line." It is designed as a whole system to resist penetration, using measures ranging from common hand tools to powerful weapons, for whatever period is necessary.

Protection against vehicular attack. After erection of the Berlin Wall, East Germans were quick to exploit the many hiding places that motor vehicles provide for people and contraband. Escapees have rolled through well-guarded checkpoints despite increasing scrutiny by border guards. As we know from the devastating attacks on our embassies and the Marine quarters in Beirut, vehicles can conceal large quantities of explosives, and can themselves penetrate lines of defense by a combination of weight and speed.

Protection against this kind of attack calls for barriers with the strength to stop a vehicle of assumed weight traveling at a probable speed; they should be placed to keep the maximum distance between the target and a possible explosion. At the very least, steps should be taken to prevent vehicular breach of building walls.

Parking, shipping, and receiving areas present special problems for access control. Ideally, parking should remain outside the target building and as far from it as possible. Vehicle searches can be instituted, but even the most thorough procedures are not entirely reliable, especially during peak arrival periods. In all cases, vehicle passengers should be required to pass through personal access controls at any building entrance.

For shipping and receiving areas, the following basic guidelines should apply:

- Vehicle checkpoints for at least some identity check and search should be provided at or near the site perimeter, remote from areas being protected.
- Personnel arriving with delivery vehicles should be screened at the perimeter and should not be permitted to enter the target building at all. Lounges and toilet areas should be provided well outside the target area. It may be prudent to require that drivers and passengers remain with delivery vehicles at all times while on site.
- Approaches to loading docks and other areas should, by use of circuitous routes and other means, prevent vehicles from gathering speed.
- Shipping and receiving areas should be detached from target buildings or separated by construction designed to resist the anticipated threat.
- Uncrating and breakout should, ideally, take place outside the secure area to permit cargo inspection and to minimize the size of objects that must pass into the target building. Large security doors are available, however, and if very tight security is mandated, freight can be moved through a main building sally-port, or may even be subjected to x-ray inspection before being admitted.

While every building needs some degree of access control, the effectiveness of all security measures depends on the people who operate and oversee the security system. If card-key or identification badge systems are carelessly administered, or if personnel become lax or harried, the best physical barriers and technical systems are rendered ineffective.

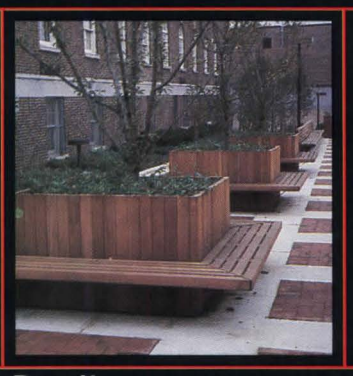
When all is said and done, people do the security screening, just as it is people who pose the security threats.

Stuart L. Knoop, AIA ■

The author is vice president of Oudens + Knoop Architects, P.C., in Washington, D.C. Over the past 20 years his firm has designed many public and private buildings in which security has been a major factor. He served on the National Research Council's committee on embassy security for the U.S. State Department.



Round it...



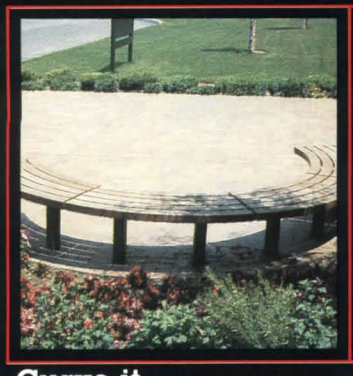
Box it...



Circle it...



Corner it...



Curve it...



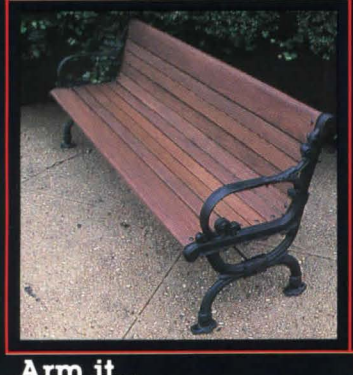
Table it...



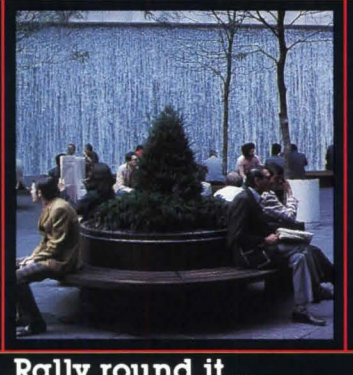
Stuff it...



Group it...



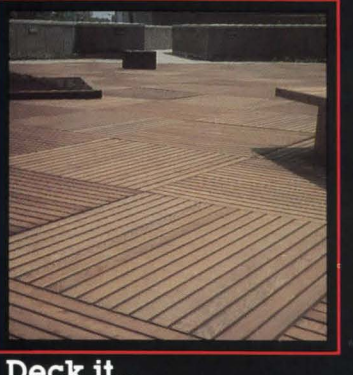
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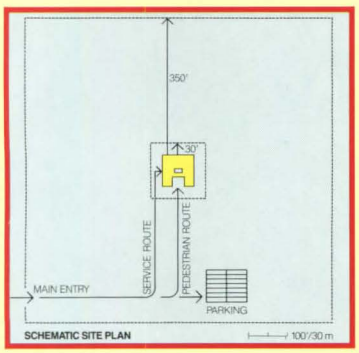
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Protecting Critical Functions



The schematic site plan for a U.S. Customs Service building in Miami (above) shows a major setback provided to offer acoustical isolation and radio-frequency signal attenuation. A second perimeter fence within that area controls the flow of visitors to the service and pedestrian entries. The plan (below right) of the Customs Service building, designed by Burt Hill Stinson Capelli of Washington, D.C. shows the placement of sensitive functions to ensure their security. Security Level 1 areas (1) are located at the rear of the building, adjacent to the more critical Security Level 2 spaces (2). Walls surrounding these areas incorporate a variety of soundproofing, tamper-resisting, and radio frequency-shielding techniques. Mechanical equipment (3) is located toward the most public side of the building to provide an acoustical and radio-frequency buffer. The secure, inner courtyard (4) offers a protected break area. Administrative offices (5), the least sensitive zone, occupy the front of the building.

In buildings for which security is a prime consideration, many clients and architects expect that security concerns will dominate all other program needs and goals, and that most amenities, particularly visual appeal, will be sacrificed in the interest of safety. Further, many anticipate that security will mean expensive materials and strange equipment throughout—especially for government projects, which are often perceived to have standards vastly different from those in the private sector.

An increasing number of recent projects dispel these myths. As the private sector comes to terms with its own requirements for ever more protected facilities, government and corporate security and design expertise are merging.

Happily, many architects are finding that (except perhaps in the most tightly secured and utilitarian of military installations) security-conscious design need not result in buildings that are either grim or exotic. What's more, a measure of careful attention to technical detail can make relatively ordinary building systems serve higher security purposes.

A case in point is the design for a command, control, communications, and intelligence building for the U.S. Customs Service in Miami. It illustrates the convergence of strict federal security requirements and the desire for high-quality design.

In common with many other law-enforcement agencies, operations of the U.S. Customs Service require security in four key areas. Physical security measures are required to control access and prevent unauthorized personnel from entering restricted areas. Visual security is required for certain internal spaces—to protect visitors and personnel working in sensitive positions and to safeguard classified information. Acoustical protection and isolation are required for similar reasons. Finally, sensitive communications and data-processing facilities require protection from electromagnetic and radio-frequency interference (referred to as EMI and RFI).

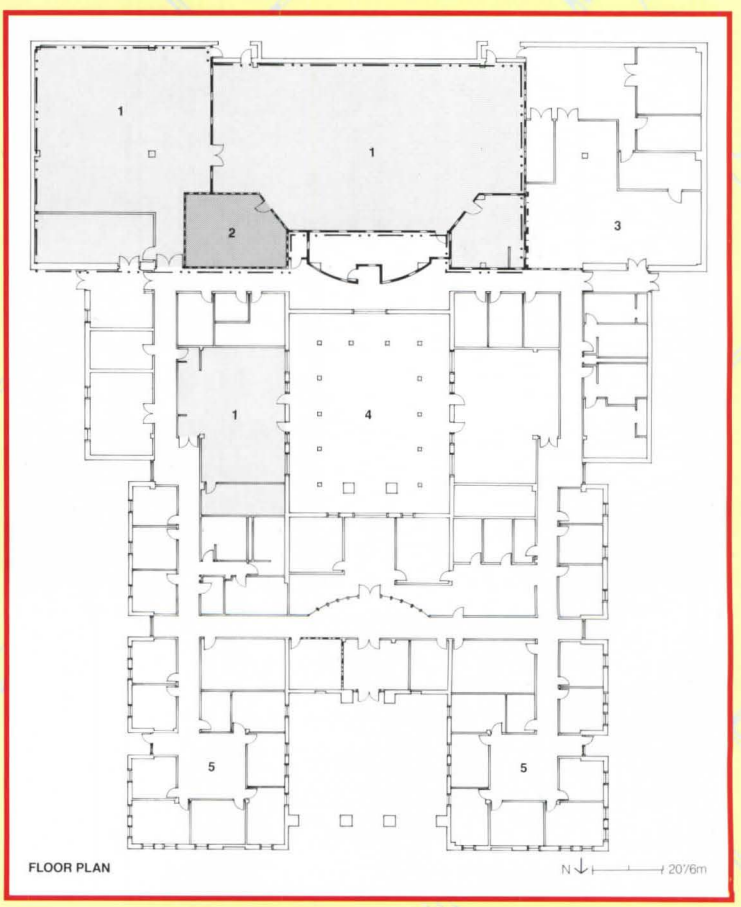
In short, Customs Service security requirements are less demanding than those for a military installation, but much more so than those of typical commercial offices. Nonetheless, the agency's work requires that skilled professional personnel be attracted and retained; in this regard, the Service's desire for design quality in the work environment is very close to that found in private industry.

Thus, the design issues and approaches encountered in such facilities are common to buildings in which security must share attention with other factors, including appropriate architectural image, occupant safety and comfort, economy of construction, and ease of maintenance.

With careful attention at the outset to overall security requirements and available technical alternatives, both security and design objectives can be met by simple, low-cost modifications to ordinary design details and construction materials. In this approach, typical building systems overlap with and reinforce protective measures, allowing security to become a natural part of architecture and design.

Site design. The facility is located on a military base, offering the initial advantage of some control over access to the site. A first zone of perimeter security and standoff distance is established at 350 feet from the building by a fence. This standoff addresses all areas of security concern, including acoustic isolation and RFI protection, because both sound and radio frequency signals attenuate with distance.

A second perimeter fence at 30 feet from the building reinforces the controlled flow of pedestrian and vehicle traffic.



All fence openings are monitored constantly by closed-circuit television. Outdoor lighting within the second perimeter zone provides both nighttime architectural illumination and uninterrupted lighting for the closed-circuit television system.

Building form and configuration. The traditional hot-climate device of an inner courtyard is used in the Florida building. This provides a pleasant, energy-conserving feature and offers the advantage of a secure outdoor break area—a handy refuge for employees working around the clock in the operations center, which is a highly controlled computer environment. In rainy or cool weather, people working long hours at high levels of concentration can use adjacent break rooms with views into the courtyard.

The inward orientation implied by the essentially Mediterranean form is carried through in smaller, recessed entrance courts, axial circulation, and low, symmetrical massing.

Building plan. The most secure functions are placed at the center of the building, buffered by adjacent, less sensitive zones. Areas designated as Security Level 2 must meet stringent standards for protection of "sensitive compartmented information"; they derive additional protection from the surrounding mass. Security Level 1 areas are required to meet moderate standards for forced entry, visual, acoustical, and RFI protection. The program required that these areas be capable of easy expansion, so one exterior wall is designed for this purpose.

Mechanical and utility rooms are located toward the most public side of the building, providing an additional buffer.

Exterior construction systems. The facility is occupied and operated at all times, and is located on a constantly protected site, so many steps that might otherwise be required to protect against surreptitious forced entry are not required.

Thus, relatively conventional reinforced masonry walls, suited to seismic and hurricane risk areas, are satisfactory; they also support architectural aims for massive appearance and physical security of the building walls. An ordinary metal roof deck also serves, by means of special grounding details, as an element in the protection against radio frequency interference.

Interior partitions. Five different types of interior partition systems were devised in response to varying types and degrees of security needs. All partition types represent relatively low-cost modifications of the steel-stud and gypsum-board assemblies typically found in office buildings.

Necessarily, for purposes of acoustic and radio frequency protection, all partitions extend from the concrete floor to the underside of the metal roof deck. Protection against ballistic weapons is required only in the vicinity of the security guard station, to a level afforded by exterior masonry walls.

Partitions around areas designated as Security Level 2 are intended to delay would-be forced-entry intruders long enough for guard response. For areas requiring radio frequency shielding, a low-cost alternative uses a layer of foil-faced gypsum board; for electrical continuity, joints are covered with conductive tape, and the wallboard face is connected to the metal roof deck and the building grounding system. Walls, floors, and ceilings around a vaulted room, used for the storage of critical equipment, require extra concrete reinforcement.

Mechanical and electrical systems. All ductwork having a cross-sectional area greater than 90 square inches and penetrating the secure areas of the building must be barred in order to prevent human breach. Acoustical privacy is also accommodated in the design of duct transitions, using slight modifications to ordinary techniques. For EMI and RFI protection, in addition to the shielded enclosure techniques outlined above, reliance is placed on extensive electrical grounding systems.

Separate grounding systems serve each of four distinct functional areas within the secure zones. The base building structure also is grounded.

Ducts, pipes, conduits, wires, and any other electrically conductive paths must have an electrical break wherever they cross into or through a secure zone. It is best to avoid such intersections wherever possible; the use of elastomeric joint drain lines and plastic pipe and conduit also eliminates the need for special couplings. Where wires cross the secure boundary, electrical filters must be used and space must be left nearby for filter cabinets.

Access control and security management. A central security office houses monitors for closed-circuit television cameras and a wide variety of status indicators for building spaces and access control systems. All visitors to the facility are screened by guards and must be escorted by cleared personnel while inside the buildings.

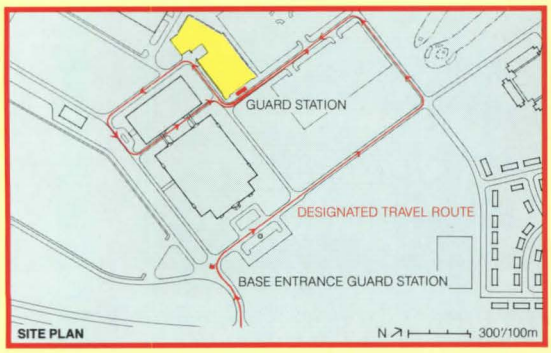
Overall, experience with Customs Service buildings suggests that the technical requirements of security for people, information, and buildings can be accommodated smoothly and economically within the established, larger processes and values of architectural design. Designers can protect critical functions against a wide variety of potential security threats by the careful (and sometimes clever) adaptation of many currently available building components and systems. ***John K. Holton, AIA*** ■



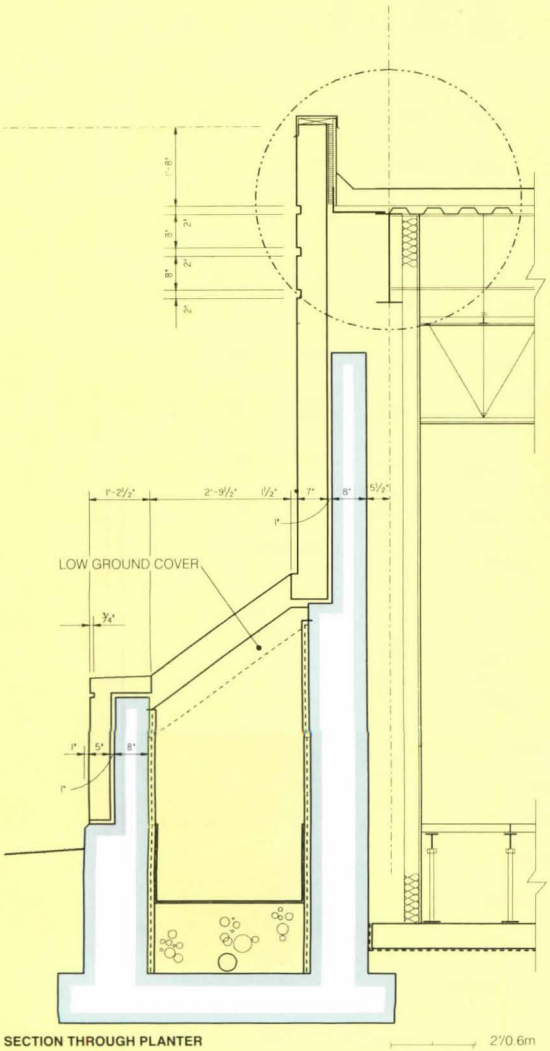
The U.S. Customs Service building in Miami offers appropriate levels of security, even while incorporating hot-climate devices such as an inner courtyard.

The author is a senior associate with the Washington, D.C., firm of Burt Hill Stinson Capelli (a recently formed merger of the D.C. offices of Burt Hill Kosar Rittelman Associates and Stinson Capelli). Before joining BHKRA in 1981, Mr. Holton was director of the energy conservation division at the General Services Administration.

What Might the Future Hold?







The Air Force Logistical Systems Operations Center at Wright-Patterson AFB (Dayton, Ohio) required a building for high-security, data processing and related operations. The data processing space, located to the rear of the building, had to be windowless, one-story high, and without occupied space or mechanical equipment above or below it. The building was designed to protect against not only sabotage and espionage, but to assure the survival of critical military logistical operations during wartime and in the event of accidents and natural catastrophes.

The building, designed by KZF Inc. of Cincinnati, Ohio, benefits from basewide security and access control. Vehicles are screened by guards at remote posts (site plan, top) before being admitted to the site. They then approach the center (highlighted in yellow) by a designated route. The deep relief in the end stair towers and precast concrete window elements (rendering, middle) carries architectural rhythms from the two-story public and administrative areas to the windowless single-story data processing areas. To the south, along the road, precast planters (bottom) serve as crash-resistant vehicle barriers. The planters also lend proportion to the elevation, adding variety to what otherwise would be a monotonous wall.

Reflecting its shared tenancy and mix of internal functions, the building is subdivided not only according to levels of security but also, within a given area, according to sub-zones of permitted access. The most public functions are concentrated on the outer perimeter and toward the main building entry, while compartmented areas with closely controlled access are placed to the building's rear and center.

Certain matters of building security have been insufficiently explored within the profession. At this juncture, scrutiny should focus on at least two broad areas of need: the protection of electronically stored information and resistance to bomb blasts.

Signal Attenuation

The privacy of electronically stored and managed information is of concern at some level to virtually all government agencies, both federal and local, as well as to many private businesses. In the face of advanced espionage methods and "electronic vandalism" in the industrial, banking, and national security spheres, it is clear that conventional building techniques are poorly suited to the protection of vital computer-based data and cannot assure the privacy of privileged or secret information.

The theft of state secrets, confidential data, and privileged information has been accomplished by remote monitoring of signals in the radio frequency range, which are emanated by all computers and communications devices that have not been specially protected or shielded. Similarly, navigational and guidance systems for civilian and military aviation are subject to accidental radio frequency interference (this is why, for example, the use of radio receivers and transmitters is prohibited in passenger compartments on airliners), to say nothing of electronic sabotage or tampering.

Several techniques have been tried for containing emanations from such electronic equipment in buildings. A typical approach, used widely for communications centers in military facilities and embassy buildings, is to enshroud sensitive interior portions of the building with metal enclosures that are designed to be impervious to "leaks" of signals in the radio frequency range; signals cannot enter or exit these spaces, except via transmitters, receivers, anten-

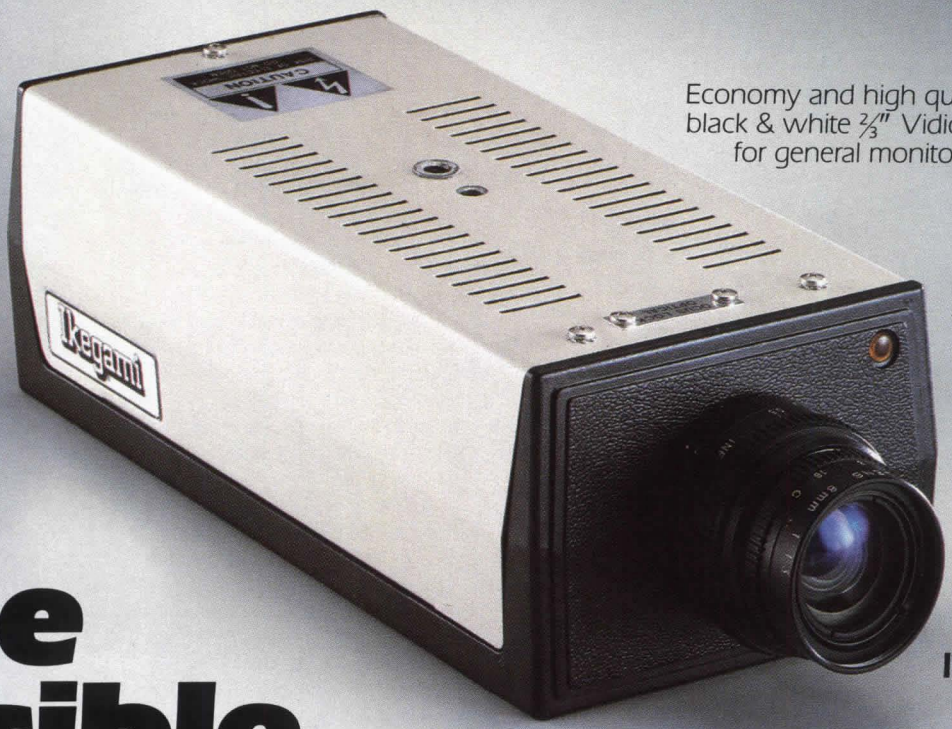
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Ikegami's advanced technology and skill build responsive capacity and performance into every one of its high quality black and white video cameras. There's a reliable, economical Ikegami camera designed and engineered to fulfill the requirements of any monitoring application.

The easy-to-install ITC-410 featured above, for example, with horizontal resolution of 650 lines or better. ALC of 100,000:1. Automatic beam control for consistent operation, 2:1 interlace and synchronization for compatibility with auxiliary TV equipment. A low-light level version is available. Auto-iris is standard on all models.

There's an Ikegami ultra-miniature ICD-200 solid state chip camera available. Shock- and vibration-resistant, it provides steady, distortion-free performance even in strong magnetic or electrical fields. The ICD-200 even resists sensor burn for long, operational life. Also available in 24 volt AC, line-lock, phase-adjustable configuration.

Need remote capability? consider the ITC-420 ⅔" Vidicon camera, which adds low-cost installation to economical price. A single coaxial cable transmits both power and video signals. Automatic beam control circuit assures consistent operation, while a cable length compensation switch provides accurate control.

For excellent performance in a compact, lightweight unit, see the ITC-400, with an ALC range of 20000:1. Plus auto-iris control. Automatic beam control. DC and low-light level options. Vertical phase-adjustable.

And for cost-savings on ultra-high sensitivity and high resolution, Ikegami offers the ITC-510 1-inch video camera. Featuring resolution of 850 lines or better for magnificently clear images. Rugged, heat-dissipating aluminum enclosure. Featuring line-lock and genlock. Low-Light version available, too.

Examine the unique combination of value and performance offered by each Ikegami video camera. And discover how Ikegami capability makes a visible difference in every monitoring application.

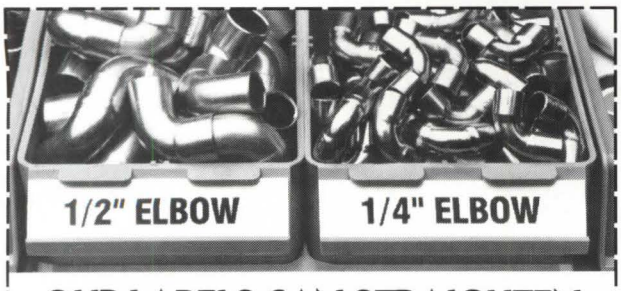


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(continued from page 154)

nae, and cables kept under tight control.

The encapsulation approach has been tried on a larger scale in several recent high-security buildings. These schemes have used ferrous metal materials or thin metallic films applied as part of the exterior of the building envelope, including windows, thus protecting or "shielding" the entire building interior to some level.

Neither of these approaches, however, is totally satisfactory from the standpoints of initial and life-cycle costs; they are expensive to install and maintain. Performance is questionable, too. Overall signal attenuation is not as effective as electronic security experts desire and is weakest at windows and joints. All approaches, aside from a few factory-made "shielded modules," are essentially one-of-a-kind solutions directed at a recurring and increasingly serious problem.

Interior and exterior enclosure systems are needed that can attenuate radio signals over a broad spectrum of frequencies and power ranges. These systems should be flexible enough to accommodate inevitable changes in space requirements and uses. For a broadening range of buildings, they will have to be capable of offering efficient, cost-effective performance at higher levels and over longer periods of time.

Blast Resistance

Both federal agencies and private businesses operate in environments here and abroad where the threat of terrorist bombings cannot be ignored. In concert with other government agencies and private companies, the State Department is seeking ways to protect buildings and their occupants from the primary and secondary effects of bombings (which are, incidentally, among the most common forms of assault against U.S. embassy buildings).

Efforts to date have settled for reinforced, cast-in-place concrete frames and shear walls as the most effective of structural systems from the standpoint of resistance to blast effects (that is, resistance to progressive collapse or catastrophic failure).

But even this approach leaves at least one lingering problem: the potential for spalling from the interior faces of concrete walls as a consequence of blast-induced loads. Blasts cause deformations that produce pieces of spalled concrete, which can become deadly projectiles inside the building; most interior finishing systems provide little or no protection against the devastating effects of such fragments. (Some elements, such as nonloadbearing interior metal partitions, may actually contribute to blast hazards by providing additional material that can become shrapnel.)

Also needed are interior wall and finishing systems that can restrain projectiles created by the partial failure of structural and envelope components due to blasts, without themselves failing or otherwise compounding the hazards. These, too, must be flexible and economical.

Finally, there appears to be considerable potential for further development of shock-absorbing systems and assemblies. The Naval Civil Engineering Laboratory at Port Hueneme, California, has produced conceptual designs for window and door assemblies employing cellular materials that can be compressed, thus absorbing blast energy, in the interests of leaving glass intact.

Similarly, at least one private engineer has proposed ideas for energy-absorbing exterior wall assemblies, though their costliness raises questions. One variation would allow wall panels to be pushed back along steel guideways by the blast wave.

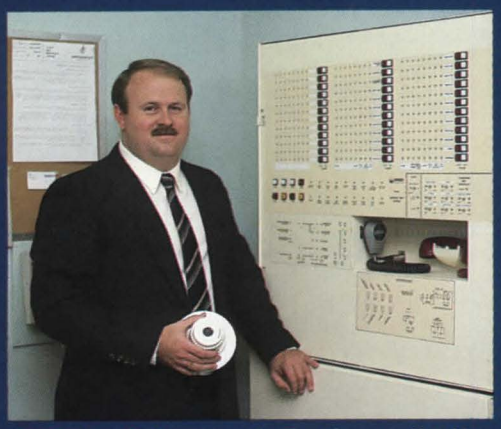
Perhaps the technology of base isolation, now successfully being applied as a structural engineering approach for overcoming seismic phenomena, could have applications in blast resistance. For seismic design, the idea is essentially to place a giant shock absorber between the earth and the building. What might this concept offer for blast energy absorption?

In any case, it appears certain that architects, engineers, researchers, clients, and building product manufacturers will have no shortage of security-related developments on which to collaborate in the years ahead.

Thomas Vonier ■

BRK Detectors Protect Four Seasons' Luxury Hotel





Ron Parker, chief engineer for Four Seasons Hotel in Newport Beach, CA, has high praise for the BRK smoke detectors being used in conjunction with the hotel's Gemini Series 2000D Voice Fire Alarm System.

Throughout the corridors and banquet rooms of the magnificent new 19-story Four Seasons Hotel in Newport Beach, California, are 100 BRK system smoke detectors. Practically invisible among all the finery, these photoelectronic detectors are part of a comprehensive life-safety system that includes single station smoke detectors in each of the guest rooms, along with duct detectors in the air handling system.

According to Ron Parker, chief engineer at the hotel, "You always expect a certain amount of start-up problems on a complex this large, but we have been very pleased with the performance of the BRK detectors. They are doing an excellent job in all 22 zones throughout the facility with no failures. In fact the few false alarms that we have had have been quickly traced to human activity."

The hotel's installation includes BRK Model 2851 plug-in detectors with standard B101B bases for general corridor applications, Model 2851's with B106B bases that provide auxillary relay contacts to activate automatic door closures in all public meeting/dining areas, and Model DH1851 duct detectors in the variable volume HVAC system.

In addition to excellent stability, the BRK detectors are meeting the hotel's needs in other ways, including low maintenance, easy testing and a 3-year warranty.

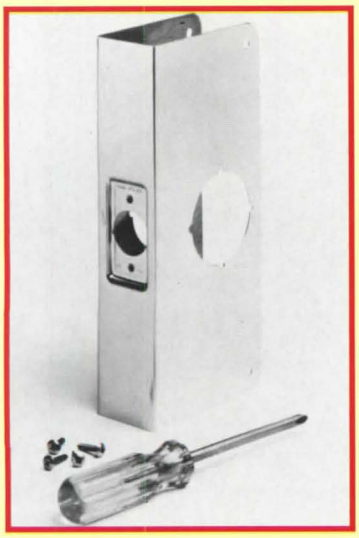
To see how effectively BRK smoke detectors can meet your supervised fire alarm system requirements, just call BRK or any fire alarm system manufacturer.



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Circle No. 315 on Reader Service Card

Security Products



The Install-A-Lock Door Reinforcer doubles door strength and resists "kick-ins" by encasing the door, lock, and latch in one solid unit. The hardware, which comes in brass, bronze, or stainless steel, can be used to repair kicked-in doors in lieu of replacement. MAG Engineering.
Circle 151 on reader service card

Profilon Plus glass protection film can be applied directly to the interior surface of windows. The material combines polyester film and continuous nylon filaments to absorb the force of physical attacks. Several colors of film are available for solar control. American Armatura.
Circle 152 on reader service card



A video surveillance system is capable of displaying the scenes of up to eight cameras on one or two monitors using sectional screen viewing. If more detailed observation of one view is needed, that image can temporarily fill the screen as a time-lapse VCR records the other cameras. Elmo.
Circle 153 on reader service card

The Money Sentry transmitter is designed to send a signal when cash is removed from the holding clip in a cash drawer. With a suitable receiver, the signal can trigger alarms and other security devices, such as video cameras. The device is one of many transmitters and other security products shown in this company's 13-page brochure. Linear Corporation.
Circle 154 on reader service card

The Nite-Kat IR floodlight uses near-infrared light to let surveillance cameras see in light invisible to the human eye. Narrow spotlights with a 450-foot range or a variety of floodlights, for wider coverage, are available. The lamps have lives of 2000 or 4000 hours. An indoor version is now also on the market. GTE.
Circle 155 on reader service card



The Positive Identifier biometric identification system aids in access control by helping to eliminate forgery and misrepresentation. In 4.4 seconds, the system measures the height, width, and depth of a person's hand and fingers. Card readers or keypads can be connected directly to the unit. National Control Systems.
Circle 156 on reader service card

NuTech 11 security system integrates local alarms, smoke detectors, light controls, panic buttons, and medical alert pendants in a single control unit. The entire system is accessible through a single "intelligent keypad" with its own microcomputer that communicates with the control unit. Arming and disarming alarms requires one code, from one to five digits. NuTone.
Circle 157 on reader service card



The IQ-200 terminal independently collects time and attendance data and stores up to 5000 transactions until polled by a host computer. The terminal can restrict employee clocking by time, day, and reader, and can incorporate security and access control features as options. Applied Realtime Systems.
Circle 158 on reader service card

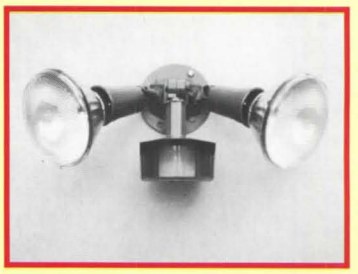
Automatic revolving security doors allow passage in one direction while preventing movement in the other. A person entering from the wrong side hears a recorded voice say "Wrong way. Please exit." If he fails to step out of the door, it reverses its rotation and "backs the passenger out." Horton Automatics.
Circle 159 on reader service card



A low-cost, high-performance monochrome camera features a ⅔-inch solid-state image sensor and provides burn-free video for up to ten years of uninterrupted service. The camera can deliver a usable picture in brightness levels as low as .5 footlamberts, and offers 425-line horizontal resolution. Diamond Electronics.
Circle 160 on reader service card



Protech security windows have frames that accept bullet-resisting material up to 2¼ inches thick, and that cannot be removed from the exterior. The window transparencies are designed to absorb 2600-pound ballistic forces at velocities up to 2800 miles per hour. Protech security doors are also available. Ballistic Deterrent Systems.
Circle 161 on reader service card



An automatic outdoor light control activates built-in twin lamps when its self-contained infrared sensor detects body heat or movement within 45 feet. The lights can be timed to remain on from ten seconds to 20 minutes. Tandem Enterprises.
Circle 162 on reader service card

A ceiling-mounted passive infrared detector uses a dual sensor system to screen out false alarms caused by reflected lights, drafts, and rapid temperature change. The system also avoids detection of small animals. Optex, Inc.
Circle 163 on reader service card
(continued on page 167)

(continued from page 158)

The DTR Series intrusion detection system uses barbed wire atop fences as both a physical barrier and an intrusion alarm sensor system. Using the taut wire principle, sensors on the wire activate the alarm when the wire is deflected. The system is adaptable to existing fences and provides virtually no false alarms. Safeguards Technology.
Circle 164 on reader service card



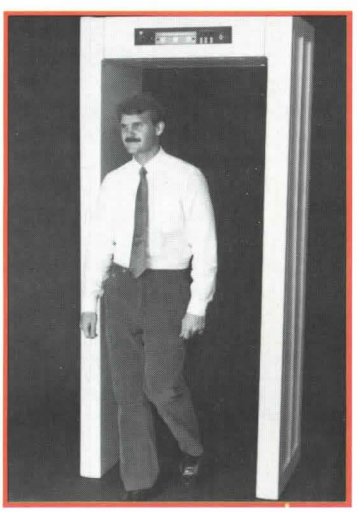
A central computer system monitors, records, and reports access control and alarm activity for up to 256 entrances and 1024 alarm points. The system can produce individual histories for specific cardholders, entrances, or monitor points. The hardware consists of a desktop computer with a 40 MB hard disk, a 1.2 MB floppy disk drive, and an EGA color monitor. Schlage.
Circle 165 on reader service card



Automated entrance gate systems are available with 15 standard or custom-designed gates in hardwood, hand-forged steel, cast aluminum, or cast bronze. The system's Gate-Tech gate operator integrates an adjustable steel support system with the gate opener, thus concealing the operator for safety and aesthetics. Catalpa, Inc.
Circle 166 on reader service card

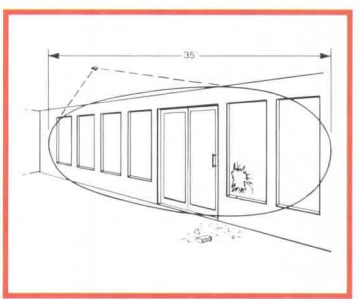
The Vidiscan video monitor provides three different matrix displays, allowing the simultaneous review of either four, nine, or sixteen cameras. Identifying text can be placed in the upper or lower portion of each image. The unit offers an alternative to repeated monitors or sequential camera switching. Videoplex.
Circle 167 on reader service card

Security grilles and closures featured in a 16-page brochure are available in eight rolling and sliding models. Also featured are rolling counter shutters and service doors. The brochure includes specifications and typical details for the entire line. Dynaflair.
Circle 217 on reader service card

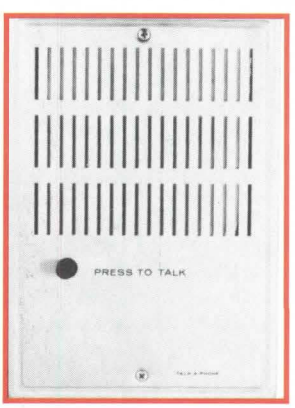


The Sentrie AT Metal Detector avoids false alarms by distributing signals more evenly. The unit can detect small stainless steel guns while ignoring pocket clutter and jewelry. Eight site-specific models are available, each with up to 99 sensitivity settings. Del Norte.
Circle 168 on reader service card

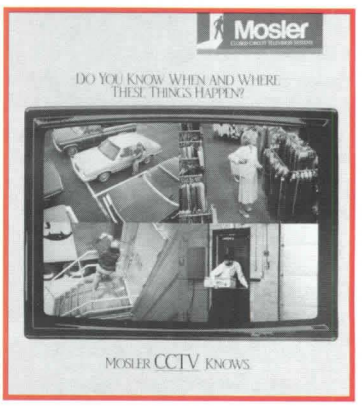
Steel barbed wire obstacles are available in several sizes and styles for security needs ranging from industrial and commercial sites to correctional and military institutions. A six-page brochure displays this company's line of barbed wire, identifying the recommended types for specific uses, and includes ordering information. American Security Fence.
Circle 218 on reader service card



The Shatterbox passive glassbreak detector responds to the sound of shattered glass while digitally filtering out other high-frequency sounds, thus preventing false alarms. The electronic microphone is capable of covering a 35-foot bank of windows, and features directional coverage for optimum signal-to-noise ratio. Sentrol, Inc.
Circle 169 on reader service card



Elevator intercoms provide communication at the touch of a button in case of mechanical failure, medical emergency, or security threat. Security personnel can also monitor the cabs on a continuous basis as a deterrent to crime in high-risk areas. The systems range from two to forty-station capacity. Talk-A-Phone.
Circle 170 on reader service card



Closed circuit TV surveillance is the subject of this four-color brochure that describes how the company can custom-design systems for a variety of businesses and institutions. Insert sheets give features and specifications for the company's cameras, monitors, recorders, enclosures, mounts, and other equipment. Mosler.
Circle 219 on reader service card



The Cardentry Ruspass access entry card gives the user the flexibility of activating an insertion or proximity reader with a single card, eliminating the confusion that can arise from using two cards. The cards can be embossed with up to three lines of information, and can incorporate photographs, custom colors, and custom printing. Rusco Electronic Systems.
Circle 171 on reader service card
(continued on page 168)

(continued from page 167)

High security doors for government and commercial use are featured in an eight-page catalog. The doors are designed to protect against ballistic attack, physical attack, surreptitious entry, explosives, and fire. Also included are acoustical doors to prevent sound transmission from sensitive areas. Overly Manufacturing.
Circle 220 on reader service card



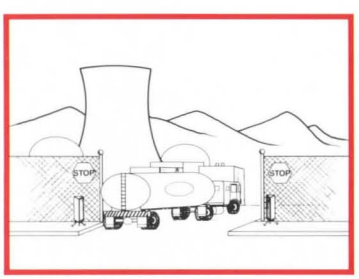
Access control card readers for use with the TechniCard line are flush mounted and suitable for tunnels, interior corridors, and other places where space is valuable. A surface-mounted model can be attached to existing walls where access control systems are being added. Both versions can be mounted in any direction so that cards are dipped, inserted upward, or inserted from the side. Frame, Inc.
Circle 172 on reader service card



The ECMG access gate controls the entry and exit of people, carts, and wheeled appliances. The gate is electrically controlled and fully motorized, is wide enough to accommodate large wheelchairs, and may be activated by a floor mat, pushbutton, or card system. Other options include variable speed control and single or dual action. Alvarado.
Circle 173 on reader service card

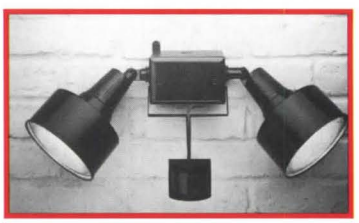
Touchlock keypad systems for homes or offices unlock doors using a four-digit code rather than a conventional key. The systems are operated with two-year batteries and include a sophisticated low-battery warning system. Other features include easy code change and a built-in doorbell. Paxton Automation.
Circle 174 on reader service card

Camera mounts, enclosures, and related products are displayed in a six-page brochure that includes photos and descriptions of over three dozen different items. The literature also features the company's new camera housings for detention and high-security areas. EMI.
Circle 221 on reader service card



Battery-powered radar intrusion detection systems offer rapid deployment and coverage of up to 328 feet per pair. The microwave sensor's tone allows personnel to determine the relative size and speed of intruding vehicles. Duration of alarm, height of detection zone, and zone sensitivity are all adjustable. Racon.
Circle 175 on reader service card

Hidden surveillance cameras come disguised as plants, clocks, fire extinguishers, and many other items in this company's line, which includes film cameras and wired or wireless closed-circuit TV cameras. A 12-page brochure features the entire line and includes a price list. Carol Products.
Circle 222 on reader service card



The C30 SecuritySwitch turns lights on automatically when movement is detected inside a 75-foot radius. The coverage spans 180 degrees, making it more difficult for intruders to avoid detection. The switch can be adjusted to operate only at night or when needed, and the system itself consumes less than one watt of power. Burle Security Products.
Circle 176 on reader service card

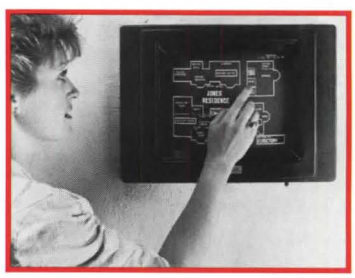
Security glazing using Saflex plastic interlayer resists bullets and attacks with hand-held weapons. Multiple layers of glass and Saflex can be custom fabricated to fit a variety of security needs. A 12-page brochure discusses the benefits of using Saflex and includes test results and specifications. Monsanto.
Circle 223 on reader service card



Domed camera housings, available with brass, copper, or stainless steel finishes, can be mounted from walls, poles, or ceilings. The units hold cameras up to 12 inches long, along with a small pan/tilt or scanner. Optional heaters and blowers allow outdoor use. Videolarm.
Circle 177 on reader service card

A closed-circuit TV system designer packet offers a detailed guide to this company's wide variety of system components and their applications. Specific data include weights, dimensions, speeds, and recommended companion pieces for cameras, housings, and monitors. Vicon Industries.
Circle 224 on reader service card

LightAlert intelligent outdoor lighting uses infrared sensors to detect motion and turn on lights. Models are available for entryways, floodlighting, and commercial applications. The user can adjust the size of the detection area as well as the amount of time that the lights stay on after movement stops. RAB Electric.
Circle 178 on reader service card



The Home Manager home automation system alerts residents and police to any attempt to open doors or windows, and turns on designated lights when such intrusion occurs. Besides security applications, the system offers convenience features such as appliance control and room-by-room climate control. Unity Systems.
Circle 179 on reader service card

Security doors of laminated glass offer protection from forced entry and bullets without security bars or barricade screens. The door systems, commonly used in airports, banks, jewelry stores, and other secured areas, are sold complete with perimeter framing, floor closers, pivots, push-pulls, locks, and cylinders, and may be ordered with electronic access lock or strike mechanisms. Falconer Glass.
Circle 180 on reader service card

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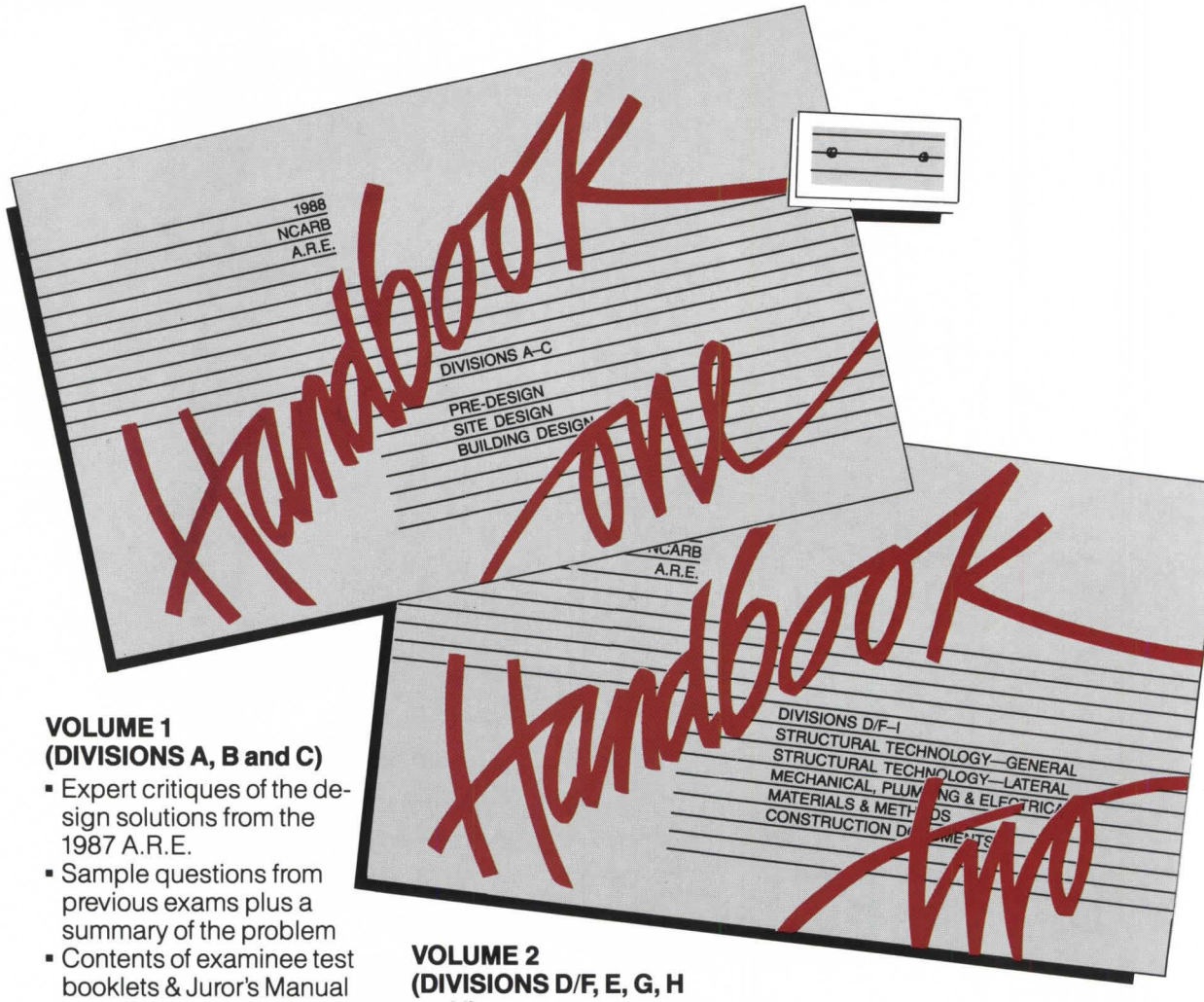
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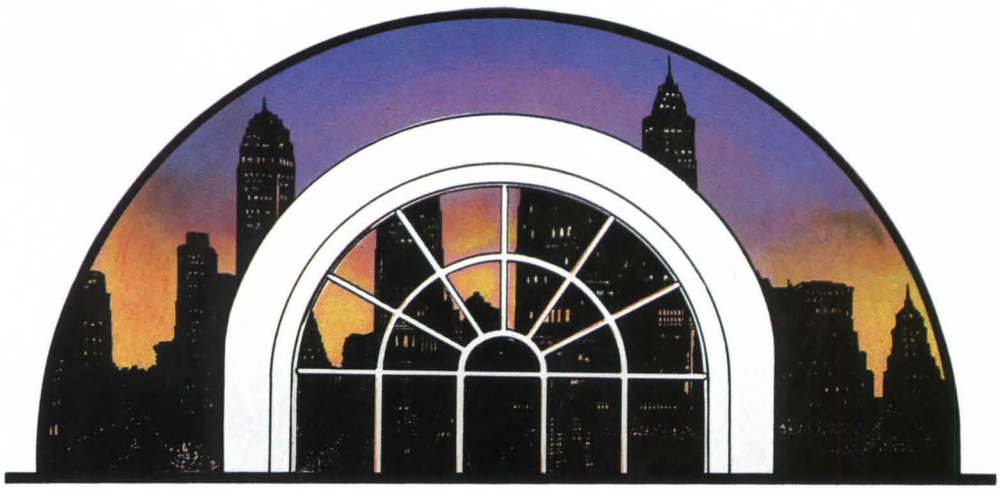
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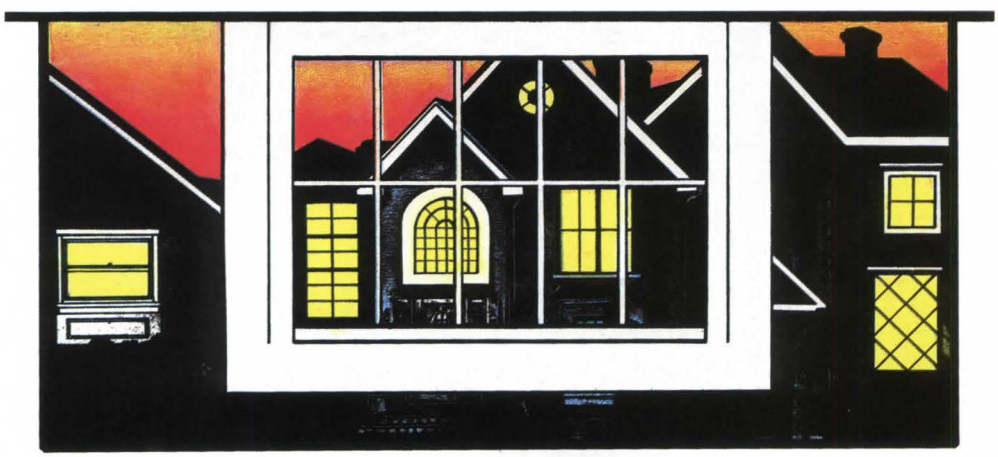
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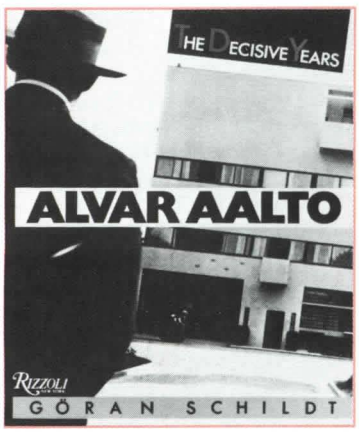
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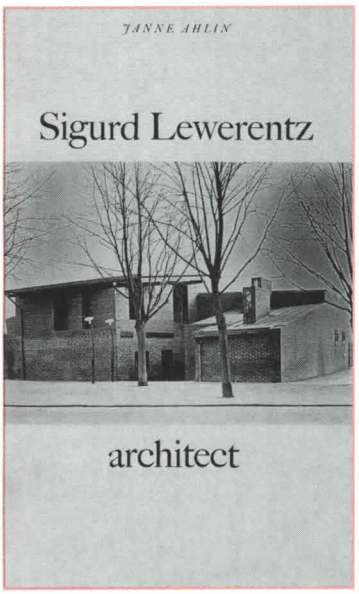
Books

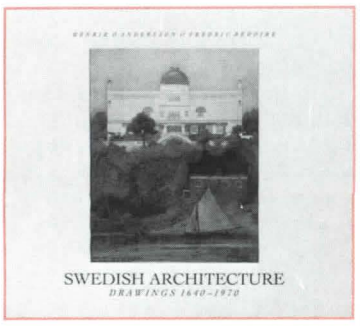
Swedish Architecture, Drawings 1640–1970 *by Henrik O. Andersson & Frederic Bedoire. Byggforlaget, 1986. 258 pp., illus., $95.00.*

Sigurd Lewerentz, Architect *by Janne Ahlin. MIT Press, 1987. 192 pp., illus., $50.00.*

Alvar Aalto: The Decisive Years *by Göran Schildt, translated by Timothy Binham. New York, Rizzoli International Publications, Inc., 1986, 282 pp., 315 illus., $40.*







Aalto, the Man

Alvar Aalto, according to the mythology of Modern architecture, emerged on the international scene in the early 1930s with such convincingly mature works as his Turun Sanomat Newspaper building, Paimio Sanatorium, and laminated plywood furniture. Overlooked was the previous decade of production in the Nordic Classic style, knowledge of which has only become generally available since Aalto's death, owing to his own depreciation of the value of this work. Göran Schildt's *Alvar Aalto: The Early Years,* the initial volume of his Aalto biography, provided an excellent assessment of Aalto's youth and first years of practice in the provincial city of Jyväskylä. *Alvar Aalto: The Decisive Years,* Schildt's second biographical volume, which begins in 1927 with Aalto's move to cosmopolitan Turku and continues to the advent of the 1939 Russo-Finnish War, examines the most vital period in Aalto's development. Conversion to Functionalism, as Modernism was termed, coincided almost exactly with Aalto's move to Turku. Having exchanged Modernism's machine imagery and reliance on universal technique for a more tactile and expressive direction by the mid-1930s Aalto's architecture, furniture, and glassware adopted the sensuous and sinuous form we so closely associate with his work.

Turku meant connection to the Continent and the European avant-garde, to whom Aalto was introduced by the Swedish architect Sven Markelius. Once in the company of Gropius, Giedion, Le Corbusier, André Lurçat, and Laszlo Moholy-Nagy, among others, Aalto actively nurtured these contacts by attending, for example, the C.I.A.M. meetings in Frankfurt (1929) and Athens (1933), and participating in the Nordic Building Congress and Stockholm Exhibition in 1930. Travel provided Aalto with direct experience of the canonical works of Modernism, and his Functionalist works—the Stand-

(continued on page 174)

Books on Sweden

Swedish Architecture, Drawings 1640–1970 begins with a swift overview of the country's entire architectural history, describing how European architectural movements were brought to Scandinavia and altered to meet the region's physical and cultural demands. The bulk of attention here, as throughout the book, goes to public and monumental buildings, and, in the 20th Century, to social housing.

The second part of the book is a chronological catalog of specific architects, including text, photos, and color plates of drawings by each. Unfortunately, the book adheres so strictly to this format that architects like Gunnar Asplund and Sigurd Lewerentz are given little more attention than lesser architects, many of whom seem to have been included solely to represent their period.

The book holds a number of pleasant surprises, though, including Louis Jean Desprez's fanciful Copper Tents of 1790. Better-known works like those of the 1930 Stockholm exhibition are depicted with well-chosen plates.

Sigurd Lewerentz, Architect walks the line between monograph and biography in depicting the life and work of Lewerentz (1885–1975), a Gunnar Asplund contemporary who moved from Neo-Classicism toward a distinctive Modern style. Lewerentz's later work, specifically a series of four churches, displays a great inventiveness with technics and materials. He showed dogged attention to masonry details, conducted frequent experiments with daylighting, and devised a frameless window that was simply glued to exterior brick walls.

Attention is also given to Lewerentz's graphic design and furniture designs, which were inspired by the Bauhaus and Art Deco. This volume succeeds in conveying somewhat fully the life of a designer whose career ran sometimes parallel, sometimes perpendicular to 20th-century history. ***Mark Alden Branch*** ■

Time-Saver Standards for Landscape Architecture *edited by Charles W. Harris and Nicholas T. Dines. McGraw-Hill, 1988. 864 pp., illus., $89.50.*
The landscape architect's answer to *Graphic Standards* has been compiled. This large volume contains a wealth of dimensions, statistics, and detailed information about "building on the land."

New Designs: Le Parc de la Villette *by Bernard Tschumi. Princeton Architectural Press, 1988. 56 pp., illus., $19.95.*
The first of the "New Designs" series of soft-cover monographs includes drawings and text by Tschumi describing his "urban park for the 21st Century." Future issues will include the work of Anthony Ames and Steven Holl.

Post-Occupancy Evaluation *by Preiser, Rabinowitz, and White. Van Nostrand Reinhold, 1987. 198 pp., illus., $39.95.*
A detailed how-to book explores the expanding practice of POEs, covering background, concepts, and process. Three case studies demonstrate the principles discussed.

Lucien Kroll: Buildings and Projects; *introduction by Wolfgang Pehnt. Rizzoli, 1988. 144 pp., illus., $29.95.*
Belgian architect Lucien Kroll discusses his individualistic, organic works, largely in terms of the design process and his efforts to involve the user in it.

The Architect's Guide to Computer-Aided Design *by Mark Lauden Crosley. John Wiley & Sons, 1988. 202 pp., illus., $35.95.*
This manual serves as an introduction to the possibilities of CAD for architects. The book describes the kinds of features and options currently available, and how to use them in the creative process.

Books *(continued from page 173)*

ard Block of Flats, Turun Sanomat headquarters, the Turku 700 Years Exhibition (with Erik Bryggman), and Paimio Sanatorium—attest to the rapidity with which he assimilated and applied his knowledge of Modern tenets.

At the time of his move to Helsinki in 1933, Aalto had achieved an international reputation based as much upon furniture design as architecture. Combining modern serial production with Finnish wood processing technology, Aalto's furniture designs—from the "Folk Senna" chair (1929) to his famous Paimio chair (1932)—evolved rapidly. It was Otto Korhonen, technical manager of a Turku joinery firm, who instructed Aalto on molding laminated plywood into curved shapes. As mass-produced items for everyday use, the tactile undulating forms of his furniture maintained a handcrafted quality; a "human touch" seen as well in his glassware. This work also provided small rehearsals in form-making that directly influenced the spatial and formal configurations of Aalto's architecture. The continuously curving seat-backs and frames of his chairs and the undulating containment of his glass vases held the conceptual seed for the sinuously shaped elements, spaces, and forms found in the Viipuri Library, the Finnish Pavilions for the Paris and New York World's Fairs, and the Villa "Mairea."

Creative production provides Schildt's setting for fleshing out Aalto's complex personality. Acceptance of Functionalism corresponded with Aino and Alvar Aalto's transformation from "countrified folk" to an urbane, modern couple. Architectural modernity paralleled an enthusiasm for the "modern way of life"—playing tennis, owning a gramophone to practice the foxtrot, buying a Fiat in 1927, and preference for "aeroplane" travel. Aino showed interest in the liberated fashions of the day, while both held "modern" views on women's equality. Aspects of this modernity included sexual relationships unconstrained by bourgeois etiquette (As Sven Markelius's wife Viola remembers, "sometimes we'd swap husbands—modern, liberated women that we were.") and a Bohemian disregard for finances. Schildt does not shy away from the realities surrounding either Alvar or Aino, sculpting revealing portraits of each and their relationship.

Combining contemporary correspondence and essays with recent interviews of individuals involved in the period's activities, Schildt's candid, lively text captures the nuances of Aalto's "decisive years." The book provides commentary on life in Aalto's office and insight into numerous significant events, such as the formation of ARTEK and work in Paris on the exhibits for the Finnish Pavilion.

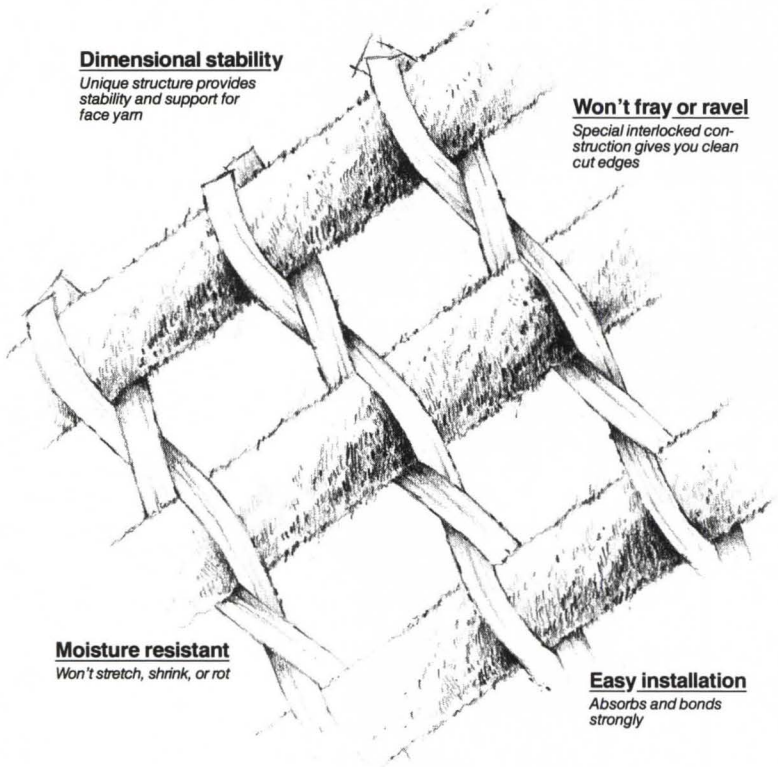
External influences were extremely important during this period of Aalto's career, though he seldom mentioned their impact upon his work. A competitive person aware of contemporary trends, Aalto often consciously explored ideas taken from his friends and peers. Bryggman and Markelius had direct influence on his Functionalist development, while the ideas of Gropius and Le Corbusier provided a backdrop. In furniture design, Asplund and Breuer supplied ideas. While Moholy-Nagy imparted knowledge on Bauhaus methods, his views on sensory experience and organic form were of more significance for Aalto; and friendships with Legér, Calder, and Brancusi served to amplify these attitudes. That the initial scheme for the Villa "Mairea" in 1938 was based upon Wright's recently completed "Fallingwater" only underscores Aalto's ability to seize the best from his peers' work, as he also drew from history, and to transform these borrowings into his own language.

In the section "Aalto and the Rationalist Ideology," Schildt investigates Aalto's attitudes toward Functionalism. Failure to integrate the individual with tradition and the natural continuum was what Aalto found unacceptable in Functionalism, not its social programs. In a world obsessed with technology, architecture was losing its symbolic content and its capacity to articulate our institutions and humanize our connection with the natural order. Industrial processes required subordination to humanistic values. For Aalto, these values were defined through the individual's har-

(continued on page 176)

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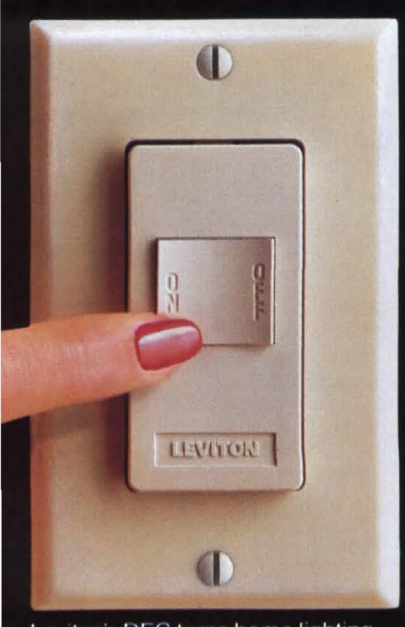
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Books *(continued from page 174)*
monious interaction with nature. Because it is diverse yet efficient, and generic yet particular, nature provided Aalto with a design strategy for supplanting modern technique. Nature's basic unit is the biological cell, a small module with the capacity to create an infinite variety of forms. Aalto sought a similitude with nature: to compose and configure architectural spaces, forms, and elements that achieved the same rich variation found in cell structures. His biological unit became the sinuous element, which in Aalto's hands was capable of unlimited variety, for it could be a ceiling, wall, space, building form, door handle, vase, chair, or lamp.

During the "decisive years," numerous thematic attributes associated with Aalto's work emerge: tactility and sinuosity become essential qualities; exterior courtyards and interior atrium spaces provide primary spatial order; ceremonial or honorific spaces and forms become articulate in plan and in volume; concern for natural light results in an expressive language of clerestories and skylights; and planting appears as an integral compositional element. These characteristics are explored in numerous, lesser known works. Spatial and formal precursors for later projects are obvious too: the Otaniemi Technical Institute lecture hall is derived from the Zagreb hospital auditoriums, while the sections of several churches evolved from worker's housing projects and warehouses, for instance.

By combining an excellently written text and numerous personal photos of Aalto's life (taken by Aino or their friends) with a wealth of previously unpublished illustrations of his work, Schildt masterfully renders his portrait of Aalto. Though other authors have made Aalto's work accessible, it is only Schildt who has made the man, and those surrounding him, palpable. For this, Göran Schildt receives our thanks. ***William C. Miller*** ■

The reviewer is an architect, a professor at Kansas State University, and the author of Alvar Aalto: An Annotated Bibliography.


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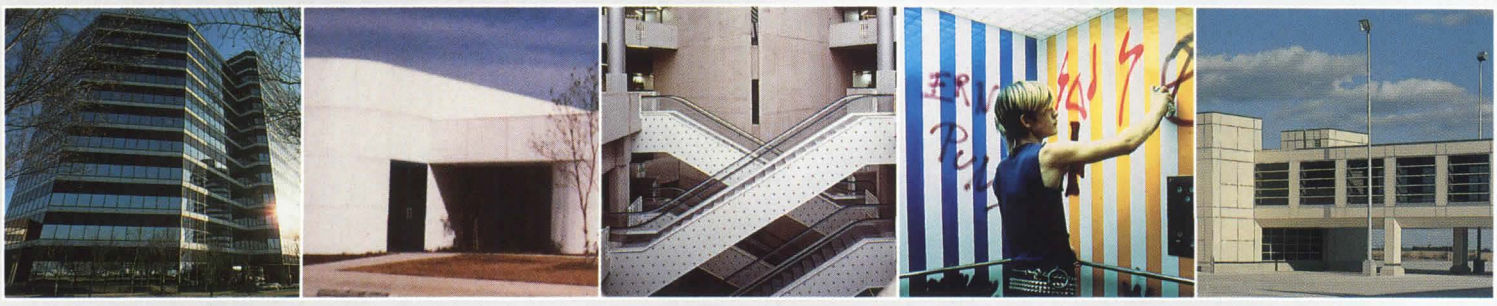
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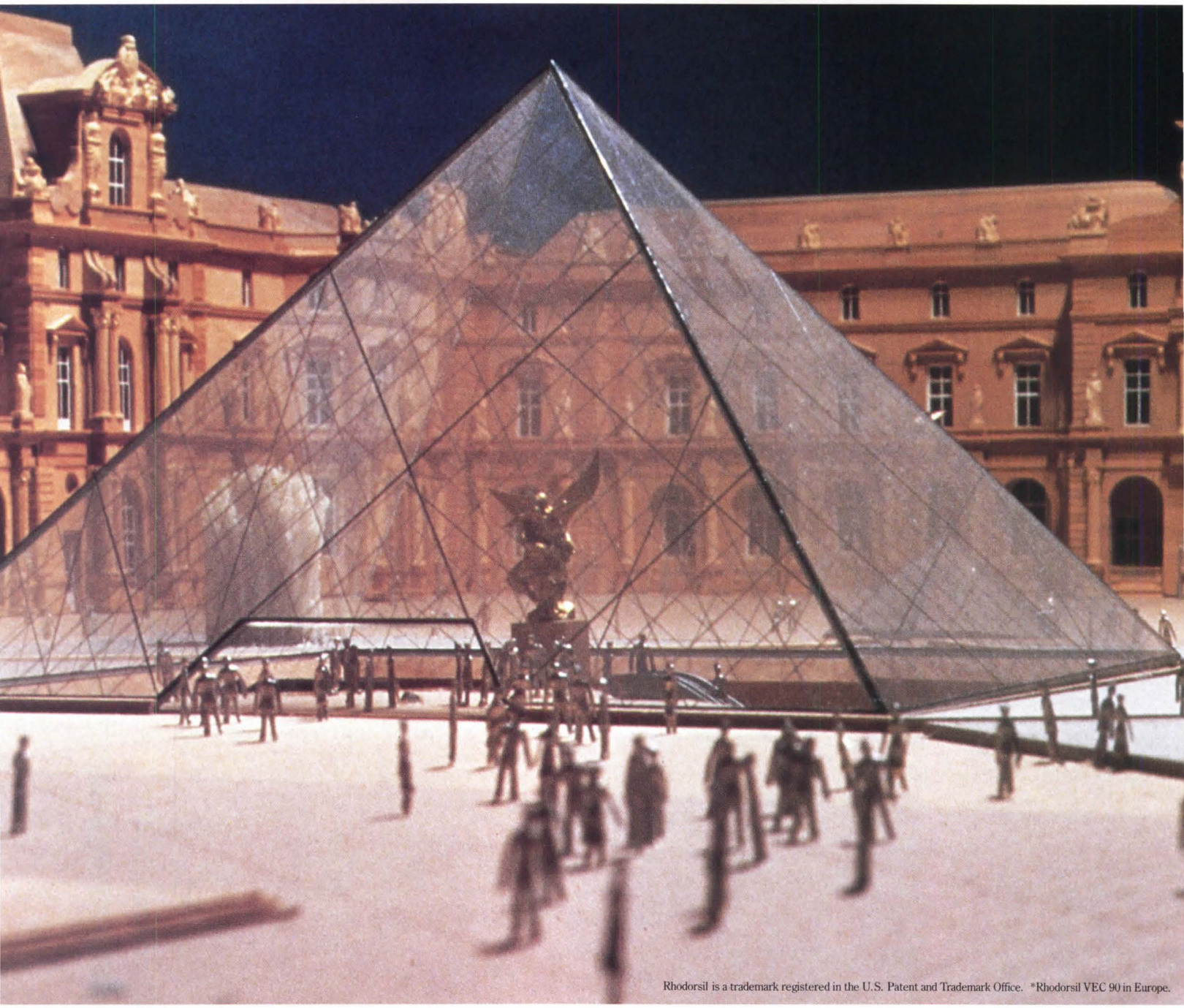
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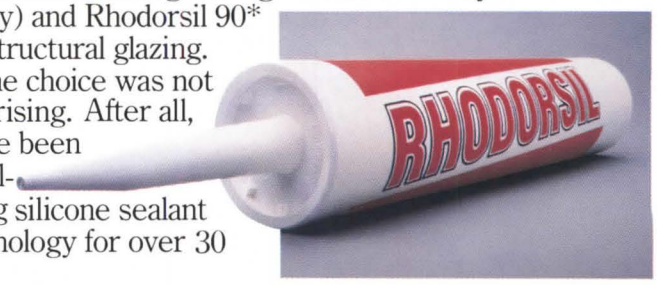
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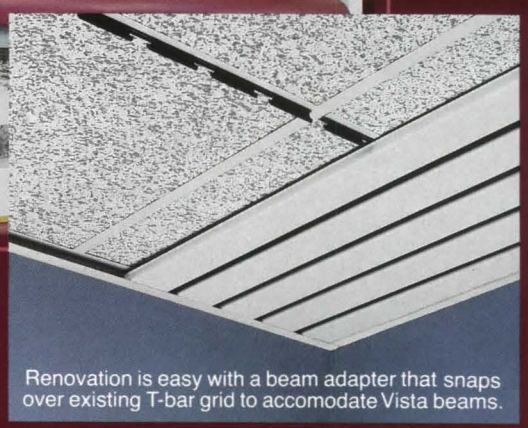
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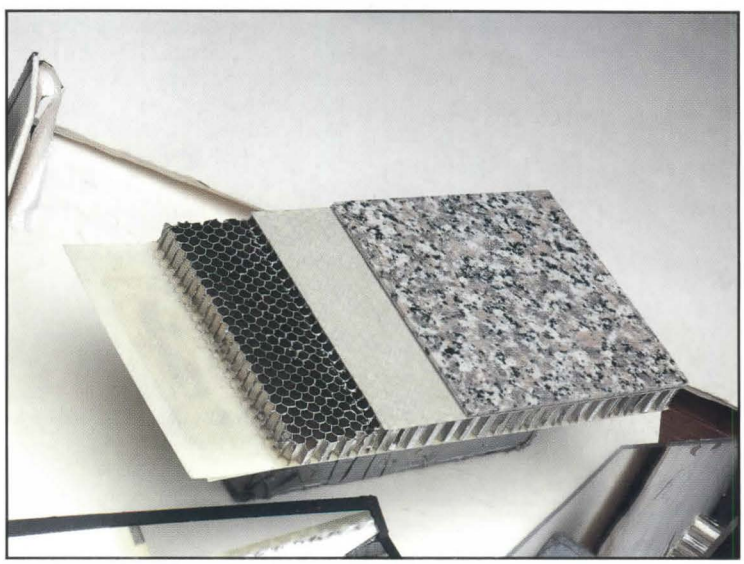
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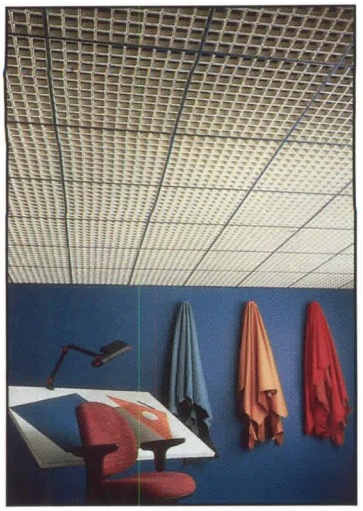
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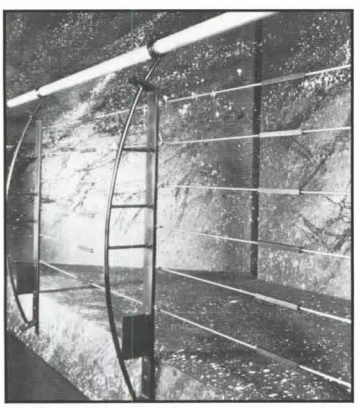






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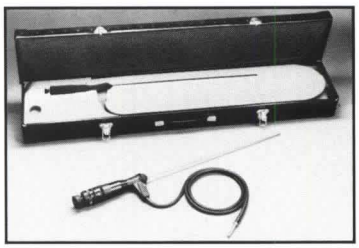
Geothermal heating/cooling systems are described in a new 20-page catalog. The WaterFurnace WX series is designed for use in climates and/or applications where temperature extremes make other geothermal systems ineffective. A section in the catalog details the best uses for WX units. Waterfurnace International.
Circle 201 on reader service card



The Savannah lever handle of solid brass, designed for the handicapped, features a patented fusible link construction in the trim rather than in the lock. The fusible link allows each lever to be affected independently by a fire's heat, permitting the occupant to exit if the lever is operable. The handle can be used for tubular latches or mortise locks. Baldwin Hardware Corp.
Circle 107 on reader service card

Copper post lanterns are shown in a wide assortment of four-sided and six-sided styles in an eight-page color brochure. There are Victorian replicas and coach lights, as well as hanging lamps. Posts are steel or aluminum with decorative bases. Although copper is standard, lamps can also be ordered in brass. Ward Industries.
Circle 202 on reader service card

Fiberglass insulation products, described in a 12-page, four-color catalog, include: unfaced, kraft-faced, and foil-faced building insulation; flame-resistant foil-faced batts and sound-control batts; blowing wool and INSUL SAFE III® fiberglass blown-in insulation. The catalog illustrates fire and sound ratings for typical insulated wall assemblies and provides information on vapor barriers, ventilation, energy standards, and codes. CertainTeed.
Circle 203 on reader service card



Measuring borescopes allow direct, visual observation and measurement of defects in buildings at a remote distance. They can determine the exact size of an interior flaw or crack or follow the progress of a developing defect. They offer complete 260-degree shaft rotation so the entire bore can be scanned and the complete area can be surveyed. Olympus Corporation.
Circle 108 on reader service card

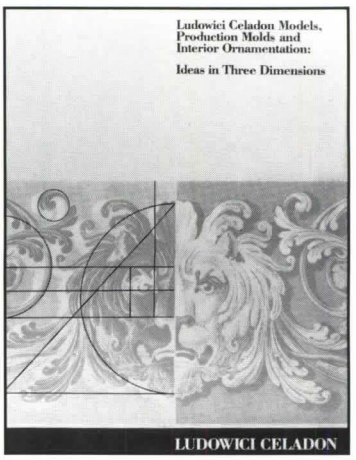
R-Wall® Exterior Insulation and finish system for use on renovation projects is described in a four-page color brochure. Before and after photographs and case summaries illustrate several different projects on which R-Wall was used. Colors and textures are also shown. Ispo Incorporated.
Circle 204 on reader service card



Stackups stacking chairs, System 23, are available in 19 colors in molded ABS plastic, wood veneer, or a selection of upholstery fabrics. The frames are ⅜-inch solid steel rods offered in four colors and chrome. Comforto Institutional.
Circle 109 on reader service card

Silhouette movable wall system is described in a six-page color brochure titled "How Do You Meet Your Need for Private, Flexible, Aesthetically-Minded Office Space?" Silhouette, of 20-gauge steel with welded stiffeners, offers choices in colors, finishes, fabrics, wood- and-glass combinations, and customized dimensions. There are electrical raceways at both the top and the bottom. Virginia Metal Industries.
Circle 205 on reader service card

The Festival Carpet Collection is a group of three new graphic designs. They have a solid base with an average of 13 yarns in each pattern: a floral pindot, a random pattern, and a flame stitch. The base colors can be interchanged; additional custom base colors are available from the Lotus 100 color bank. Lotus Carpets.
Circle 110 on reader service card



Ludowici Celadon Models, Production Molds and Interior Ornamentation: Ideas in Three Dimensions explains how the company executes new designs, makes exact reproductions of existing plaster ornamentation, and creates three-dimensional plaster models as well as plaster and rubber production molds for any object from a single piece of glass to a 20-foot-high column. They will also create shop drawings from sketches and renderings and manufacture finished pieces in terra cotta or cast stone. Ludowici Celadon Company.
Circle 206 on reader service card

Plumbing fixtures in the Studio suite consist of a water-saver toilet, a bidet, a pedestal lavatory, and three countertop lavatories. Eight American fixture colors and two Laufen colors are offered. Laufen Sanitaryware.
Circle 111 on reader service card

Lippa door lever from the Forges Collection is made of nylon with a solid zinc alloy rosette, protected with a powder-coated lacquer. Valli & Colombo (U.S.A.) Inc.
Circle 181 on reader service card
(continued on page 187)

Zeftron 500® is a registered trademark owned by BASF Corporation.



Zeftron 500® nylon

The fiber with authority?

Associated Space Design relied on Zeftron 500® nylon.

High-performance fiber for an energy efficient office complex? Associated Space Design put down versatile carpet tiles and matching broadloom with Zeftron 500 nylon because it met toughest specifications for color consistency and performance. Zeftron 500 nylon tiles are solution-dyed for long-lasting color. Dye lots are limitless. Tiles can be easily interchanged and replaced. Zeftron 500 nylon keeps Tennessee Valley Authority running very smoothly. Fibers for every way of life.

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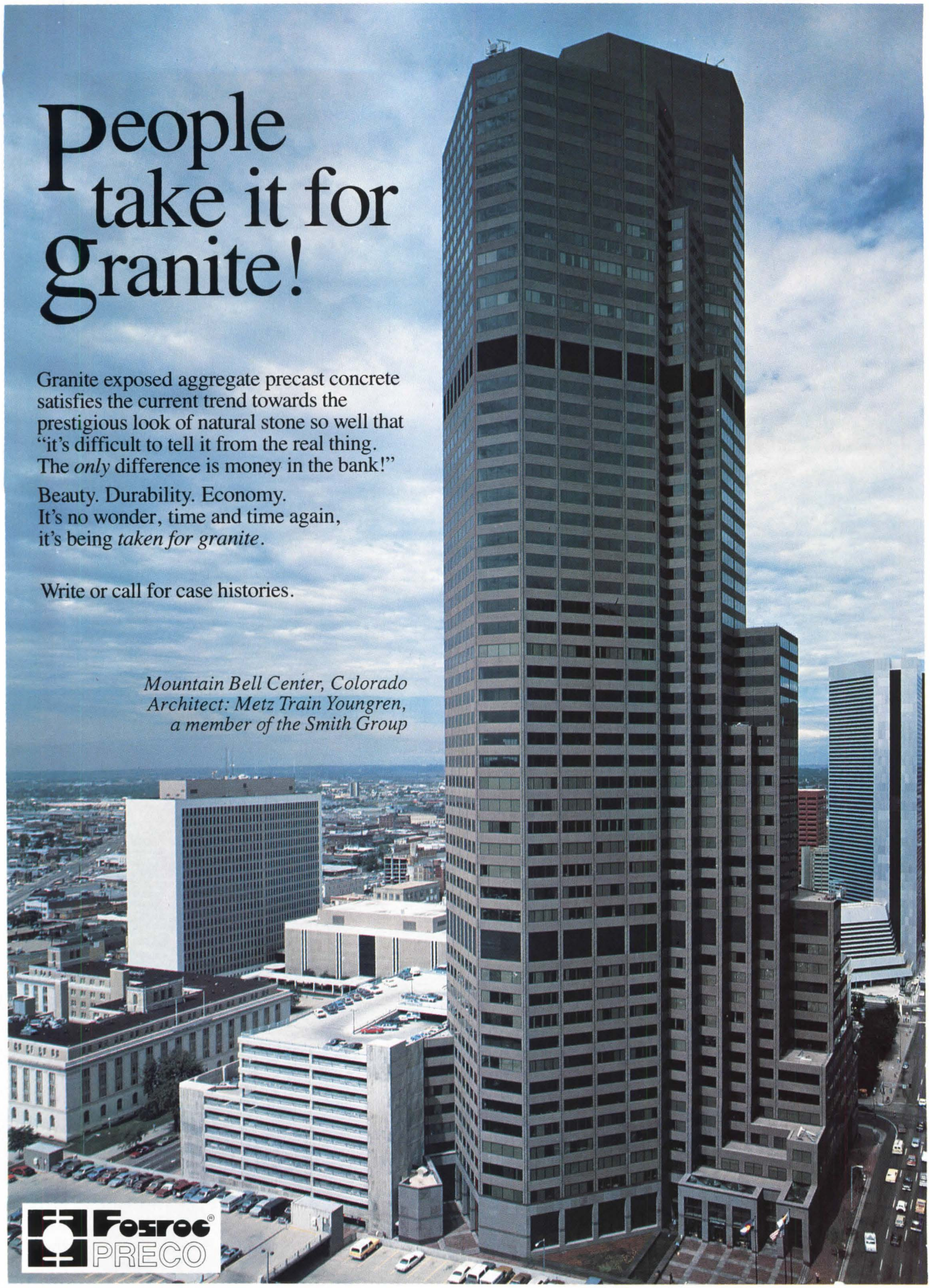
People take it for granite!

Granite exposed aggregate precast concrete satisfies the current trend towards the prestigious look of natural stone so well that "it's difficult to tell it from the real thing. The *only* difference is money in the bank!"

Beauty. Durability. Economy.
It's no wonder, time and time again, it's being *taken for granite*.

Write or call for case histories.

Mountain Bell Center, Colorado
Architect: Metz Train Youngren, a member of the Smith Group

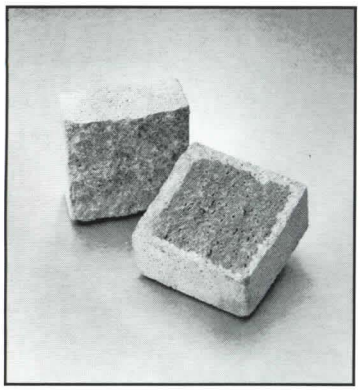


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Circle **No. 361** on Reader Service Card

(continued from page 184)



Dri-Sil™ water repellent for concrete and other masonry substrates offers long-lasting protection from the effects of water penetration. Its unusually small molecular structure allows Dri-Sil silane to penetrate deep into the substrate. It prevents such moisture-related damage as corrosion of reinforcing bars, salt leaching, and freeze-thaw cracking. Dow Corning.
Circle 112 on reader service card

Lighting fixtures designed by Judith Stockman & Associates include a pendant fixture in copper. It has an adjustable drop of a minimum of approximately 32 inches and a maximum of 66 inches. It is available polished or with green or brown patina. The globe is 14½ inches in diameter. Urban Archaeology.
Circle 113 on reader service card



Three new relief tile designs are based on the half-round molding. Each design includes a corner unit and a straight rib in 12-inch squares that can be field cut as needed. There is a wide range of finishes and colors. The tiles can be used as a framing device or as moldings. Design-Technics.
Circle 114 on reader service card

Seasonite stabilizing treatment for new exterior wood provides a slow, steady seasoning process that helps to minimize shock to the wood from changing weather conditions, reducing splitting, swelling, cupping, and warping. It provides a sound surface for painting, staining, or finishing and assures dimensional stability and good conditioning for woods that are not to be finished. The Flood Company.
Circle 115 on reader service card

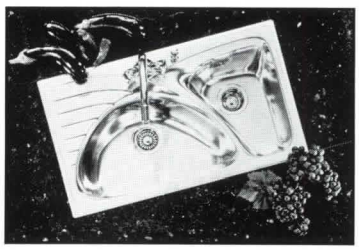
Epoxy grouting, Latapoxy® SP 100, is now available in additional colors for chemical-resistant joints with permanent colorfast colors. The grouting also provides durable, hygienic, low-maintenance surfaces, such as kitchen counters, bench tops, residential or commercial kitchen floors, and hospitals. Laticrete International.
Circle 116 on reader service card



Metering lavatory faucet, Model 844, has a self-closing, push-button design that reduces water consumption and saves on water heating bills. The cycle can be programmed for a 2- to 15-second closing time. The faucet is intended for institutional, commercial, or industrial lavatory use. The Chicago Faucet Company.
Circle 117 on reader service card

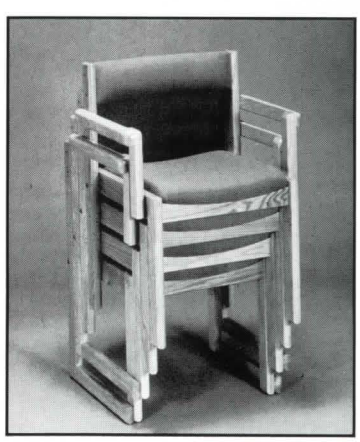
Mars Air Doors direct a stream of high-velocity air downward to the floorline, creating an invisible barrier to air pollutants, dust, fumes, and insects. They destratify warm ceiling air and prevent heated air from escaping in cold weather; in warm weather, they prevent conditioned air from escaping. More than 60 heated and unheated models are available. Mars Air Doors.
Circle 118 on reader service card

Washroom accessory products are shown in a 42-page, four-color catalog offering more than 300 items. The listing covers products for commercial washrooms, including those for the handicapped, safety grab bars, ash urns, towel and tissue dispensers, and waste receptacles. Products are made of stainless steel welded construction with exposed surfaces polished to a satin finish. McKinney/Parker.
Circle 207 on reader service card



The Sunline stainless steel sink, by designer Luigi Colani, has a bowl configuration that provides maximum working area in a small space. It is available with single- or double-handle faucets in a gold or chrome finish. Optional accessories include deck-controlled pop-up knob for drain release, colander tray, and teak cutting board. Franke, Inc.
Circle 182 on reader service card

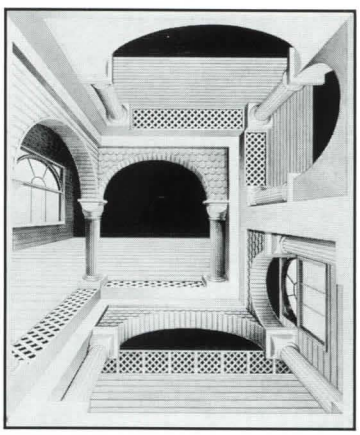
Embossed doors Regal® and Regal Limited® have a textured surface with an authentic woodgrain feel. Regal's surface is factory-primed and ready to paint. Regal Limited will accept an extensive range of stains as well as paint. Both are available in a variety of styles and sizes. Weyerhaeuser Molded Doors.
Circle 183 on reader service card



Space-saving stacking chairs, constructed of solid red oak, are suitable for cafeteria, recreation, and study areas. There are more than 100 fabric selections and two wood finishes. Options include fully upholstered seats and backs, upholstered seat with oak back, or all-wood. Modu-Form, Inc.
Circle 119 on reader service card

PC GlassBlock® products for new and remodeled houses are shown in a six-page, four-color brochure. It shows how PC GlassBlock products can be used for windows, walls, and partitions. The brochure also describes the various products available in the Standard and Thinline series, Vistabrik® solid glass block, Solar Reflective glass block, and Hedron® hexagonal glass block. Pittsburgh Corning Corporation.
Circle 208 on reader service card

Cast stone man-made material can be made to look like stucco, brickwork, limestone, brownstone, or any natural stone. Standard textures and colors are available, or they can be custom-matched. An eight-page color brochure illustrates the use of cast stone on several buildings. W.N. Russell and Company.
Circle 120 on reader service card



Exterior vinyl building products include Restoration™ vinyl siding, lattice, Great Shapes™ vinyl decorative rounds, Bradford vinyl windows, and Hampton™ post-and-rail fencing. The products are illustrated in a 16-page full-color brochure. Wolverine Technologies, Inc.
Circle 209 on reader service card

Metal Ceiling Systems catalog provides information about acoustic, decorative, or mechanical suspended metal ceiling systems. Each has a photo, description, and detail drawings. Steel and aluminum ceiling tiles are offered for areas requiring access to the plenum. Dampa, Inc.
Circle 210 on reader service card

Commercial-grade replacement windows of aluminum are detailed in a 12-page catalog. It provides features and specifications of projected, casement, double- and single-hung, triple-hung, slider, fixed-lite, specialty, and combination window units. Information is included about finishes, testing, panning systems, and security glazing. Season-all Industries, Inc.
Circle 211 on reader service card

(continued on page 189)

A FEW REASONS WHY A 350 TUFFLINE ENTRANCE LIVES UP TO ITS NAME.



AND A FEW REASONS WHY IT HAS TO.

350 Tuffline. Educational tool for the 80's. And beyond. For new and replacement doors at schools, college campuses, and in other high traffic and abuse-prone installations. Tuffline entrances are all their name says they are. Tested in the educational market, Tuffline is offered as single-acting entrances in both singles and pairs to 8′ heights. With durable butts, pivots, closers and panics to resist vulnerability and increase security when school's out. And design options such as Paneline® to customize without compromise.

Tuffline. At the head of the class.

Kawneer

For technical specifications contact:
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Technology Park-Atlanta,
555 Guthridge Court, Norcross, GA 30092

Circle **No. 345** on Reader Service Card

(continued from page 187)



The Fire Tech fabric collection, woven of 100 percent Trevira, is inherently and permanently flame retardant. The 54-inch-wide material consists of eight prints that coordinate with Matchless solids. Both exceed industry standards for upholstery and are suitable for draperies, bedspreads, and upholstery for healthcare and hospitality uses. Ametex Contract Fabrics.
Circle 121 on reader service card

Colours carpet is a fine-gauge cut pile available in 48 colors and four different face weights. It is manufactured of 100 percent Commercialon® nylon, Scotchgard® protected against soil and stains. The carpet is coordinated with other J & J styles and is also available in custom colors and weights. J & J Industries.
Circle 122 on reader service card



Remo contemporary seating consists of a lounge chair, a loveseat, and a three-seat sofa. Each has sweeping arms that slope from the back of the seat and pleated loose seat cushions. The seating is suitable for modern office, hotel, lobby, and reception areas. AGI Industries, Inc.
Circle 123 on reader service card

The Boston Shutter™ is a folding interior shutter system for windows and patio doors available in eight different cabinet woods. Solid wood faces are laminated to a urethane core that provides an R-7 insulating value. Boston Shutter & Door.
Circle 124 on reader service card

Architectural Metal Systems for roofs, walls, façades, mansards, canopies, and soffits are available in 20 standard Kynar 500 colors. Specialty finishes include aged Copper-cote and preweathered Galvalume, as well as custom colors. Berridge Manufacturing Company.
Circle 125 on reader service card

Bi-fold doors from the Tudor Collection are shown in a two-page product sheet. They include Ashford Frosted Glass, Tudor Brass, Canterbury, Tudor Beveled, and Newport bi-folds. A complete list of sizes and specifications is included, with easy-to-follow size selection information. Ledco, Inc.
Circle 212 on reader service card





Stroke of Genius Imagination Resource Series is an ongoing collection of brochures that focus on the look of contemporary suspended ceilings. Each brochure highlights several installations with information, color photography, and comments from the architectural and acoustical teams involved. Recipients may fill out an enclosed form to receive future issues or submit information on installations for upcoming brochures. Chicago Metallic Corp.
Circle 213 on reader service card

Futura 2000 solid vinyl siding, described in a four-page, four-color brochure, is a new line of eight dark earthtone colors now available in vinyl siding. A lifetime limited warranty is offered. CertainTeed Vinyl Building Products Division.
Circle 214 on reader service card

Solarium and Greenhouse brochure illustrates several structures for residential uses. There is a table of dimensions for both greenhouses and solariums. Lord & Burnham Co.
Circle 215 on reader service card

(continued on page 191)

Restoration takes a giant leap backward.

Return with us to the mid-1800's. The first thing you'll note—other than the fact your clothes seem out of fashion—is the new "Dutch Lap" siding everyone's raving about.

"I wish someone could capture that elegant look in smooth, low-gloss, maintenance-free, premium vinyl," you probably muse.

Fret not. We have.

3" Cumberland Mill and 4 1/2" Stockbridge Dutch Lap styles are now part of the Restoration Collection® of new—yet historically-inspired—siding styles from Wolverine.

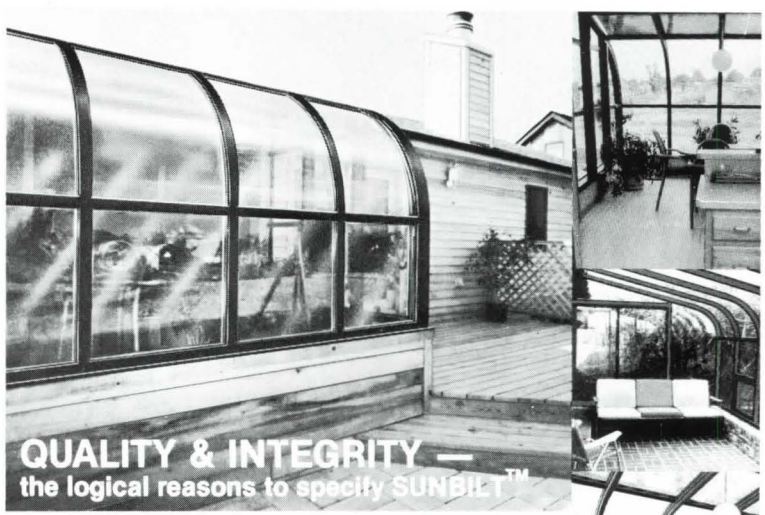
Sure, it's taken over a hundred years. But today you can get more information on the entire Restoration Collection by calling, toll-free: 1-800-521-9020. Talk about progress!



More styles, more options, more ways to make your building your own.

Wolverine Technologies

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Because in most vision applications, there's no need to heat treat. Even with the coating glazed second surface. No ripples or waves. No disappointments. An industry breakthrough.

ECLIPSE reflective glass spells design freedom. With deep, rich color and a surprisingly subtle reflectivity. Blue-green. Grey. Bronze. And with the reflective coating glazed first surface, a distinctive silver. As unique as your own work.

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(continued from page 189)



Modular carpet systems in both cut and loop pile construction are offered in a variety of designs. Ground colors include solids, multicolors, and heather effects. The carpet tiles come in either 18- or 24-inch squares, and there is a choice of three backing systems. Lees Commercial Carpet Company.
Circle 126 on reader service card

Lynnescape wallcovering catalog of washable, linenlike polyolefin wallcoverings is available without charge to interior designers, architects, and corporate specifiers. The catalog has descriptions and color swatches of the four lines available in the series. The wallcovering can be used in high-traffic contract, hospitality, and commercial spaces. J.M. Lynne Co.
Circle 216 on reader service card

Building Materials

Major materials suppliers for buildings that are featured this month as they were furnished to P/A by the architects.

Office of the Secretary of the Navy, Old Executive Office Building, Washington, D.C. (p. 114). *Restoration architects: Kemnitzer, Reid, & Haffler, Architects, Washington, D.C.* Plaster: US Gypsum. Decorative surfaces restoration: Evergreene Painting Studio, Inc. Wood floor restoration: Biltmore Campbell Smith Restoration. Paint: Benjamin Moore. Underfloor duct: Walker Duct. Lighting: Louis Baldinger & Sons.

Celeste Bartos Forum, New York Public Library (p. 110). *Architects: Davis, Brody & Associates, New York.* Carpet: Bentley Mills. Lighting: Edison Price. Chairs: ICF. Exterior louvers: Moore & Co. Drapery: General Drapery Co. Audio-visual: Rosner. HVAC: Trane. Subcontractors: Fine Arts Decorating, Newport Paint Co., Jaff Brothers Woodworking, Flood Brothers Woodworking.

Wiltern Theater renovation, Los Angeles (p. 91). *Architects: Levin & Associates, Los Angeles.* Gold leaf, aluminum leaf, decorative plaster and murals: A.T. Heinsbergen. Acoustical box office tile: Armstrong. Patterned carpet: Durkan Carpet. Rotunda chandelier and lobby pendant lights: originally by Cole Lighting; restored by Mike's World Arts. Disc wall bracket and sunburst ceiling fixtures: Boyd Lighting Co. Vintage seats rebuilt by American Seating Co. Cappuccino bar: Bailly Showcase. Curtain and rigging: Hoffend & Sons.

The Majestic Theater, Brooklyn, N.Y. (p. 100). *Architects: Hardy Holzman Pfeiffer Associates, New York.* Structural steel: North Eastern Fabricators. Steel stud gypsum board walls: U.S. Gypsum. Composite floor deck: United States Deck. Cold rolled metal roof framing: Milcor. Curtain wall and entrance doors: Kawneer. Aluminum windows: Sealaire/Kawneer. Hollow metal doors: Bilt-Rite, Steel Buck Metal Door. Roll-up door: Steelcraft. Resilient tile: Kentile. Ceramic tile: American Olean. Acoustical tile: Armstrong. Sheet roofing: CE Lotex. Interior wall paint: Glidden. Hinges: Stanley. Locksets: Schlage. Door closers: LCN. Panic exit devices: Von Duprin. Fire public address system: Edwards. Fire detection: SJS Signal. Hydraulic elevator: Dover. Oak handrails: Flood Brothers. Lighting dimmers: Strand Century. Interior and exterior lighting: Hubbell. Switchgear: Metropolitan. Plumbing fixtures: American Standard. Showerhead: Symmons. Flush valves: Flushboy. Bathroom accessories: Accessory Specialties. Electric water cooler: Halsey Taylor. Sprinkler piping: Northern. Heating/cooling: Trane. Diffusers: Titus. Woven sisal carpet: Norton Blumenthal. Oak benches: Chairmasters, Inc. Balcony stools: L + B Products. Seating upholstery: Valley Forge Fabrics. Acoustical mechanical silencers: Gale Noise Control.

Homewood, Baltimore, Maryland (p. 104). *Architects: Mendel Mesick Cohen Waite Hall, Architects, Albany, New York.* Lead-coated copper roof: Hussey Copper. Paint: Benjamin Moore. Security system: ADT. Fire alarm system: Pyrotronics. Electrical panels: General Electric. Plumbing fixtures: Kohler. Water pumps: Taco. Air-handling units: Carrier. Temperature controls: Johnson Controls. Carpets: Woodward Grosvenor.

Restoration is on a roll.

The origins of the "rolled" profile that inspired Restoration® Monterey premium vinyl siding are lost in antiquity. Or in our files.

We do know we've seen its unique shadowline on 19th-century homes from New York to California. And we know we like it.

More to the point, now you know Monterey rolled-edge, 3″ siding is part of the new Restoration Collection®. Which means it's the only rolled panel with the smooth, low-gloss finish that makes Restoration such a good idea in the first place.

Or, if you prefer 3″ premium vinyl panels in the traditional clapboard style (hold the roll), feel free to choose Restoration Cambridge.



More styles, more options, more ways to make your building your own.

They're both part of a Collection worth talking about. Good thing 1-800-521-9020 is toll-free.

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ICF Glacé Kitchen Cabinets
Design: Luigi Massoni, 1970

Pared down to a simple sleekness, without exposed hardware, the only ornament being the brilliant high-gloss finish.



P/A in May



Nick Merrick, Hedrich Blessing

Atrium in the United Gulf Bank, Bahrain, by Skidmore, Owings & Merrill.

Buildings and their Clients

Good clients are essential to good architecture, and the May P/A will feature a number of both. One article will profile the Swiss office seating company, VITRA, which has begun to hire noted architects to design both its facilities and its office chairs. Another feature story will survey the high-quality architecture that has been recently commissioned by the University of California for its nine campuses. The cover story will examine the United Gulf Bank in Bahrain, by Skidmore, Owings & Merrill, a P/A Awards winner.

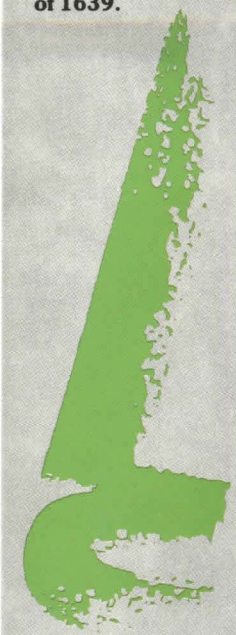
Also in May

Other articles will cover The Turabo Regional Park in Caguas, Puerto Rico, by Torres, Marvel, Flores & Associates, and the interiors of the Arab World Institute in Paris, by Jean Nouvel, Gilbert Lezenes, Pierre Soria & Architecture Studio. Technics in May will discuss what goes into making a good office chair. A special NEOCON section will follow.

P/A in June

The June issue will feature a major new building, plus a group of articles on major corporate clients and the architects that they employ and commission.

Restoration recalls the high-tech look of 1639.



When we sent our siding designers' imaginations roaming free, the first thing in question (other than how to get our staff back) was how to duplicate the wide, beaded panels that were once all the rage in the New World.

The answer: Restoration® Chapel Hill—a 6″ beaded panel that now takes its proud place in the new Restoration Collection®.

We think it's time "ye hottest looke" in 17th-century siding had another turn—but this time in low-gloss, satin-smooth, maintenance-free, premium vinyl. And if folks want to say that's like combining the best of then with the best of now, we won't argue.

In fact, we'll send literature on Chapel Hill and the whole new Restoration Collection when you call 1-800-521-9020. And it's free. (The same price as a toll-free call in 1639.)



More styles, more options, more ways to make your building your own.

Wolverine Technologies

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ACME SHIELD®

the integral agent
FOR WATER REPELLENCY
and reduction of efflorescence
IN MASONRY BLOCK AND MORTAR

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EFFECTIVENESS CONFIRMED WHERE IT COUNTS — IN THE FIELD, ON THE JOB

Buildings constructed over six years ago with ACME SHIELD as an integral part of the block repel water now with the same effectiveness as when constructed. ACME SHIELD gets the job done, and at a lower cost than any other water-repellent agent.

Well informed block producers recognize the superiority of ACME SHIELD. And they know that test reports are only the beginning in appraising a product. The true test is getting a product to perform, using the materials on hand at the plant site. That's why they prefer to judge for themselves what constitutes a water-repellent, efflorescence controlled block. The experience of decision-makers in over 100 plants, using hundreds of mix designs, confirms that ACME SHIELD controls efflorescence best.

ACME SHIELD meets ASTM standards for strength, and exceeds absorption requirements. It assures minimum water penetration and maximum protection against efflorescence in masonry block and mortar.

ACME SHIELD has also been used effectively in the manufacture of pavers, as an aid in meeting absorption and strength requirements.

Why not find out for yourself. Assess the effectiveness of ACME SHIELD using your own mix designs. Write or phone for complete information.

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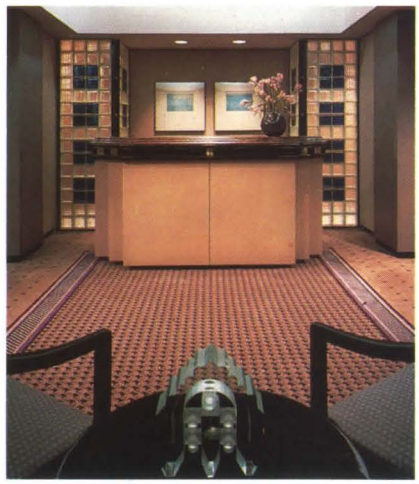
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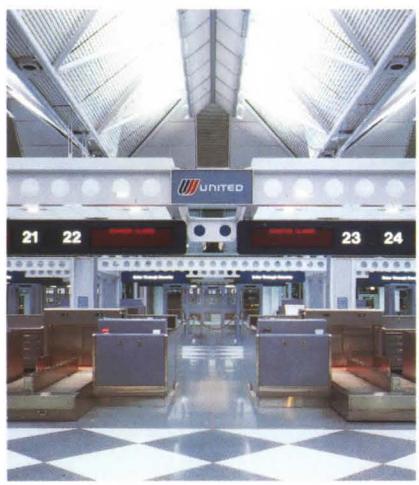
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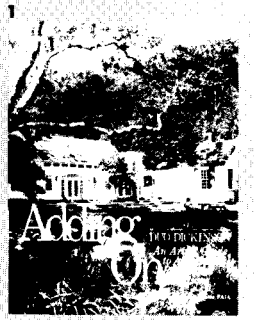
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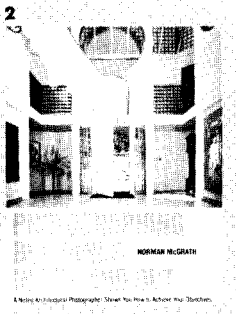
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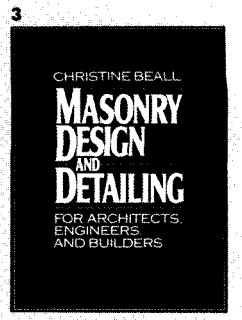
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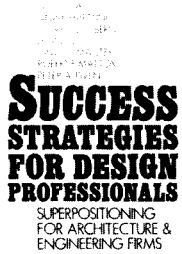
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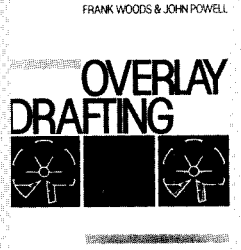
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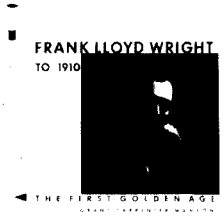
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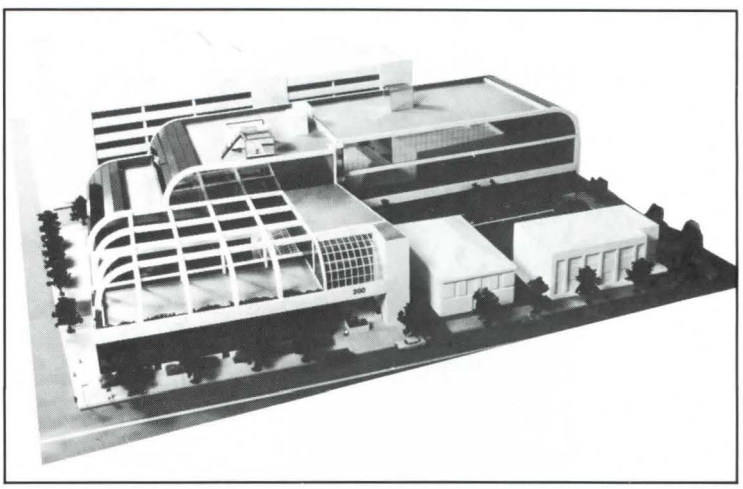
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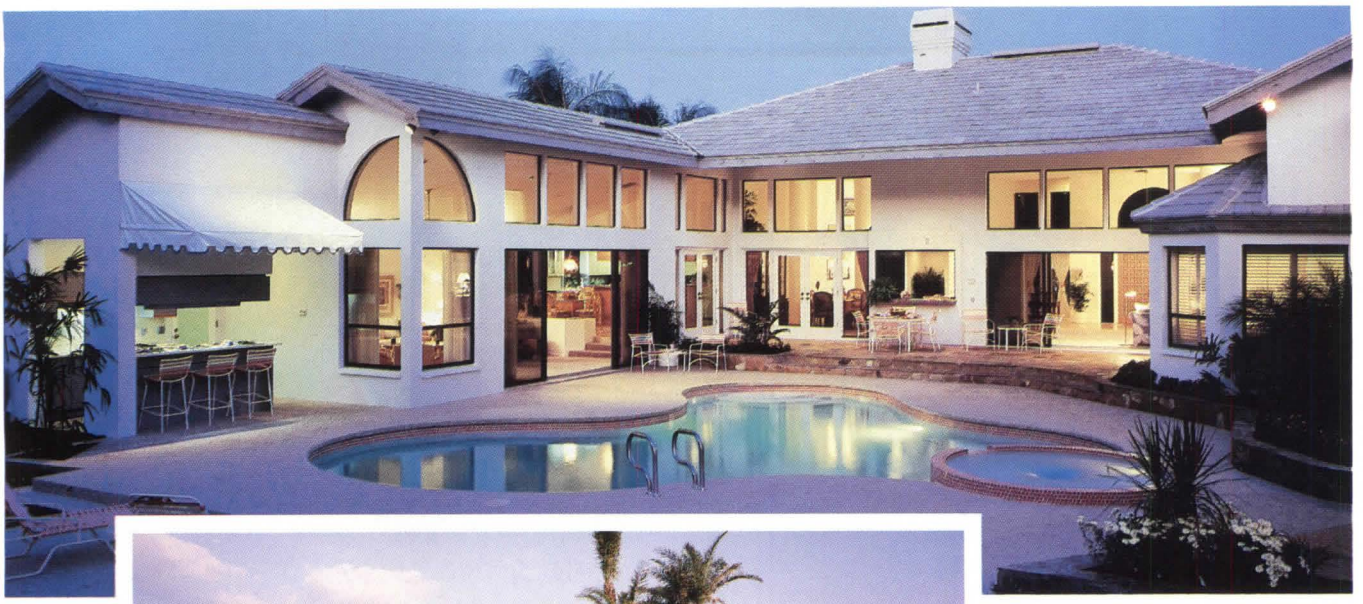
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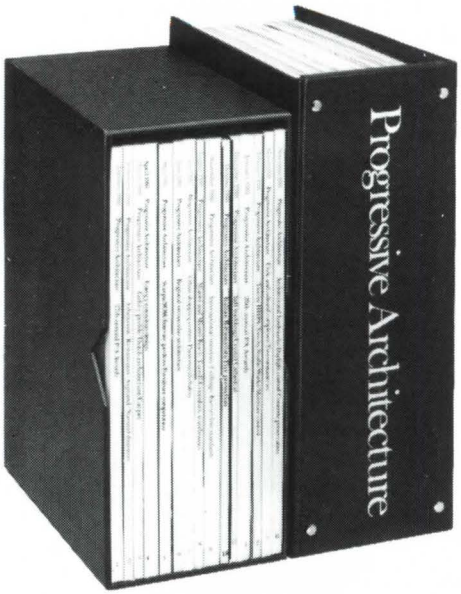
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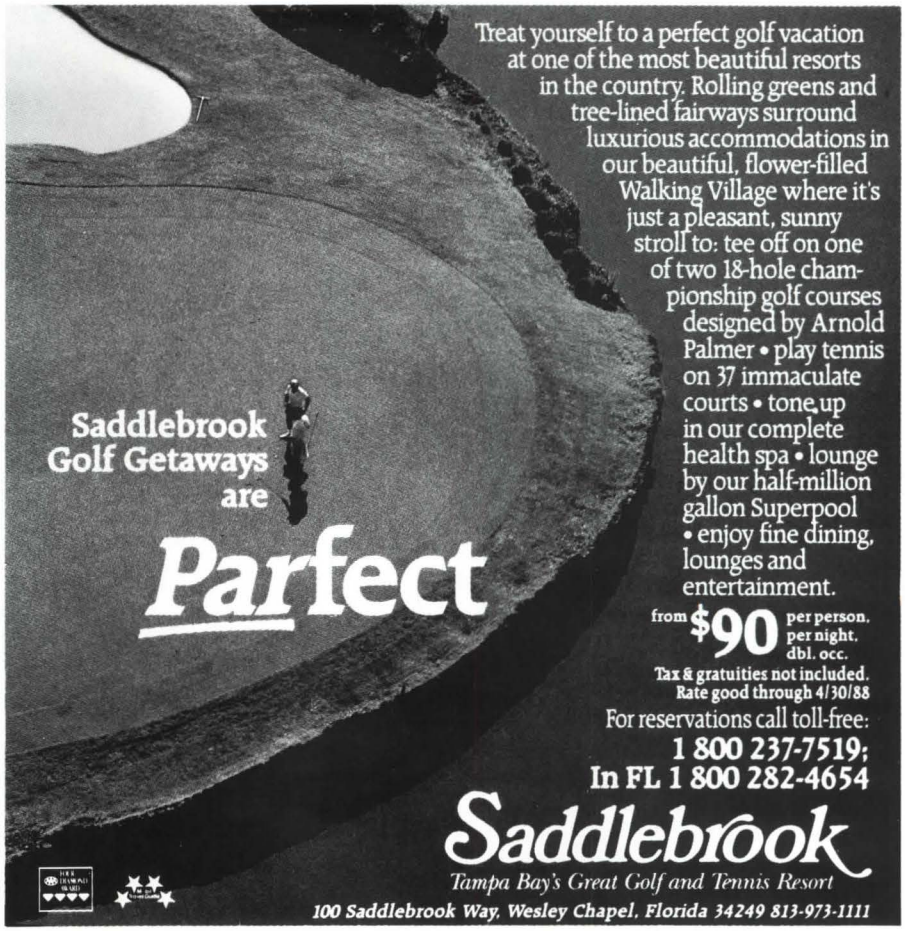
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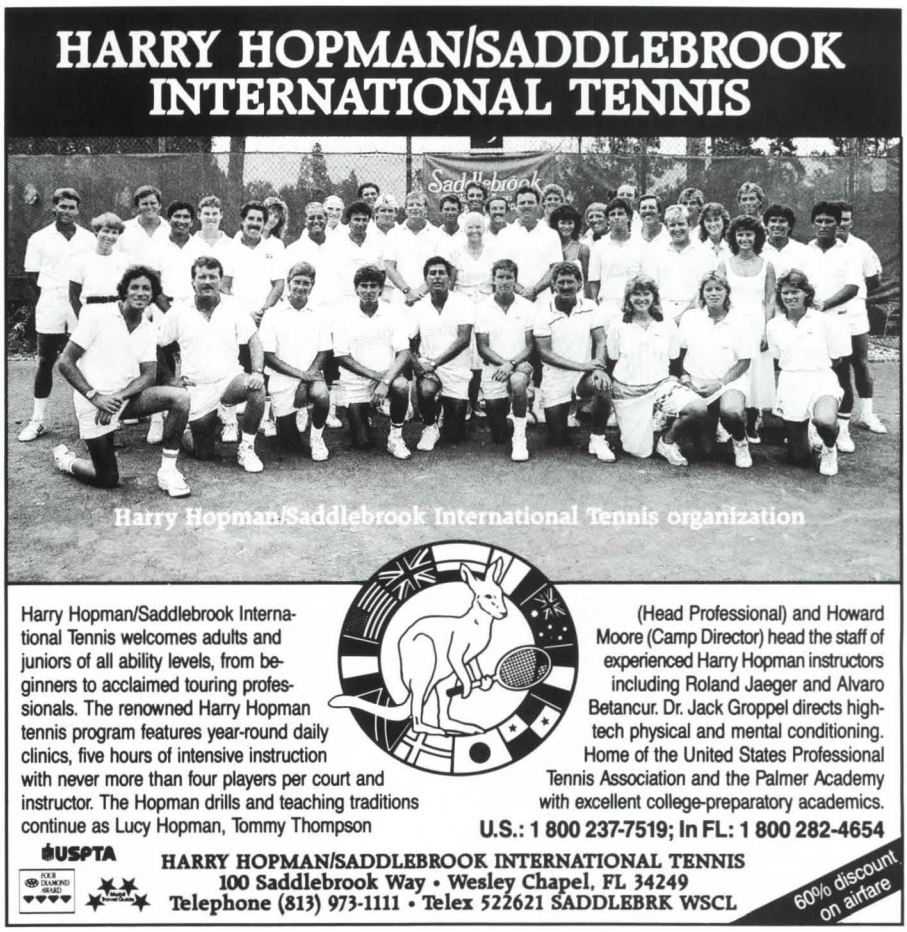
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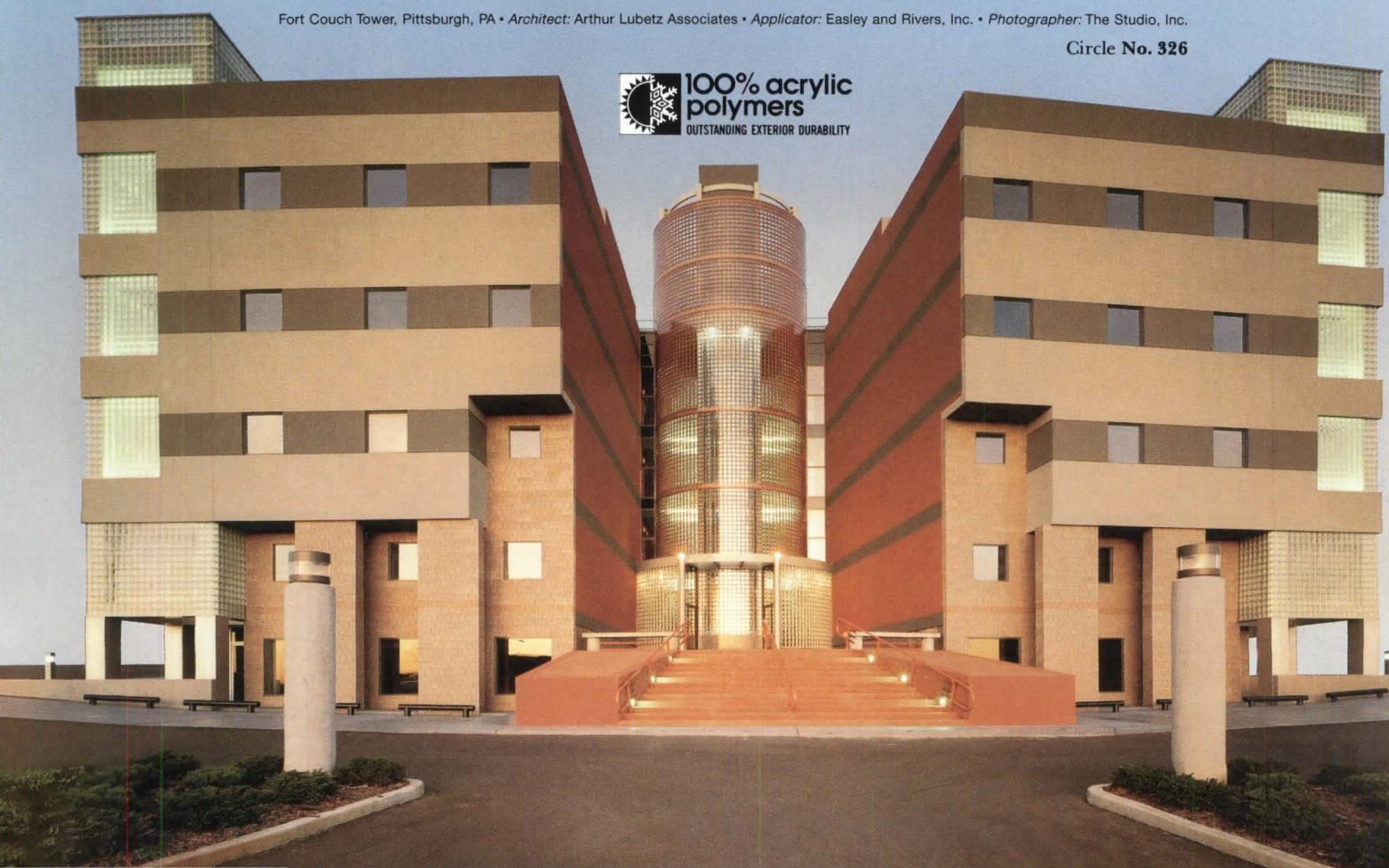
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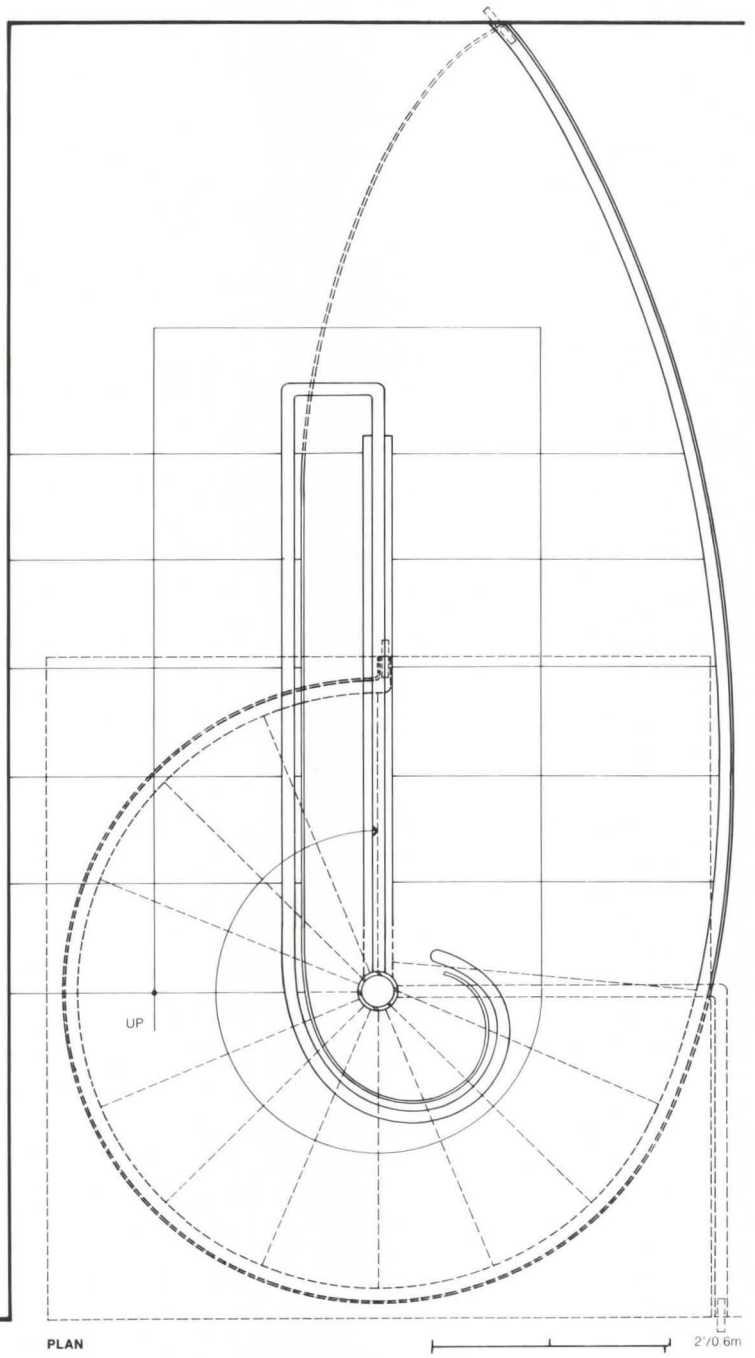
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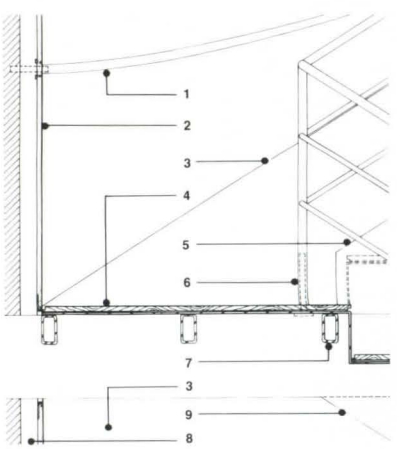
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6 STEEL UPRIGHT WITH ROD INSERT
7 STEEL TUBE
8 METAL STUDS
9 STEEL PLATE STRINGER
10 STEEL PIPE
11 STEEL RISER
12 JOINT OF STEEL SHEET WELDED BELOW LANDING
13 STEEL PIPERAIL
14 STEEL PLATE WELDED TO STEEL PIPES AND BOLTED TO EXISTING JOISTS
15 OAK FLOORING
16 EXISTING SUB-FLOOR
17 STEEL PLATE WELDED TO STEEL PIPERAIL AND SHEET
18 REVEAL
19 STEEL COVER PLATE
20 STEEL TREAD WELDED TO STEEL SHEET AND STRINGER

Interior Stair
Schneider Penthouse
New York

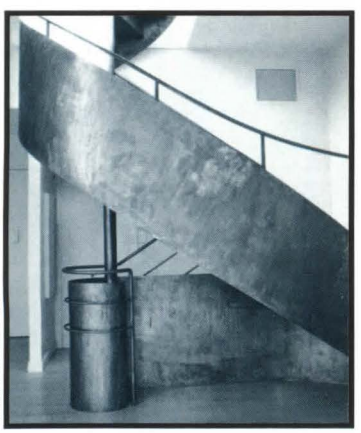
What are the alternatives to a spiral stair when dimensions in a room are tight and its ceiling is high? Hariri & Hariri Architects faced just that question in their rehabilitation of a New York penthouse. The structure had a 15-foot floor-to-floor height and an opening in the ceiling already framed for a 66-inch spiral stair. To minimize the height of the risers and maximize the depth of the treads, the architects decided to combine a dog-legged and spiral stair. The first twelve steps are in a dog-leg and the second twelve, a spiral. Those two types are tied together by the curved outer edge of the stair, which forms a logarithmic spiral defined by a single sheet of cold-rolled steel. The spiral is carried down to the floor with a steel balustrade and tube rails that repeat the logarithmic curve around the pipe supporting the spiral stair. Softening this very elegant but very tough steel shell are bleached oak treads.

Major Materials: *Cold-rolled sheet steel: Golden Rod Iron Work.*

Consultant: *Joseph Tortorella, structural engineer.*

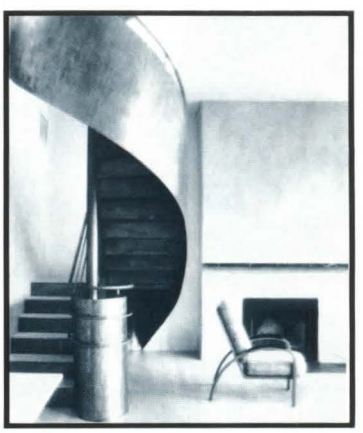


SECTION THROUGH LOWER LANDING

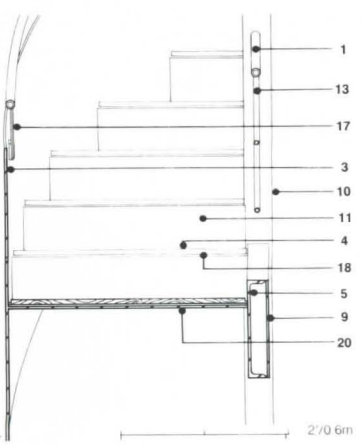


Photos: Hariri & Hariri

Side view of stair



Front view of stair



SECTION THROUGH TYPICAL TREAD

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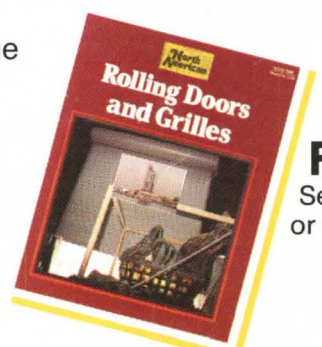
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